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EMERGENCY MEDICAL SERVICES PROJECT

NATO Committee on the Challenges of Modern Society

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Despite efforts toward greater road and vehicular safety and driver education programs, vehicular crashes occur in great numbers and deaths and injuries are not being significantly reduced. This report concerns itself with the way the state-of-the-art of emergency medical care can be more fully applied to aid victims at road crash sites and thereafter until they reach definitive medical care in a hospital.

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COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY

CCMS REPORT NO. 22

SERVICES MÉDICAUX D'URGENCE

COMITÉ SUR LES DÉFIS DE LA SOCIÉTÉ MODERNE

RAPPORT N° 22 DU CDSM

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PREFACE

COMMITTEE ON THE CHALLENGES OF MODERN SOCIETY

On April 10, 1969 – less than four months after taking office – President Nixon called for NATO to take action on environmental problems, declaring

> "... (NATO) needs a social dimension, to deal with our concern for the quality of life in this final third of the twentieth century ... the industrial nations share no challenge more urgent than that of bringing 20th century man and his environment to terms with one another ..."

In November 1969, NATO accepted the President's proposal, established the Committee on the Challenges of Modern Society – CCMS – and directed it to improve in every practical way the exchange of views and experience among the allied countries in the task of creating a better environment for their societies, and to consider specific problems with the deliberate objective of stimulating action by member governments.

To carry out its mandate, CCMS has developed a novel approach under which one NATO member as "Pilot" assumes the responsibility to undertake and complete a program. With one-nation leadership, programs move ahead quicker than under the working committee approach which is characteristic of most international efforts. Also, the need for an international secretariat is substantially reduced.

ROAD SAFETY PILOT STUDY

At the first CCMS meeting in late Fall 1969, the U.S. Representative to CCMS proposed all aspects of road safety – vehicle, highway, driver – as a CCMS effort which the U.S. would lead. NATO accepted. The National Highway Traffic Safety Administration of the Department of Transportation conducted the Study for the U.S.

The Road Safety Pilot Study was divided into seven projects, each led by a NATO ally: *Pedestrian Safety* – Belgium; *Alcohol and Highway Safety* – Canada; *Motor Vehicle Inspection* – Federal Republic of Germany; *Identification and Correction of Road Hazards* – France; *Emergency Medical Services* – Italy; *Accident Investigation* – The Netherlands; and *Experimental Safety Vehicle* – United States. Each of these efforts was a self-contained project in its own right and apart from overall coordination by the U.S. as Pilot Country has been directed by the NATO country indicated. The other allies have participated in those projects of major interest to them and such participation is noted in the final report for each of the seven projects. The conclusions and recommendations contained in these project reports are in turn discussed in the overall Pilot Study Report.

The basic purpose of CCMS is to stimulate government action – not research per se. While more research is needed in all aspects of road safety, the CCMS premise is that much is already known in one country which other countries might utilize or adapt to their unique problems. Thus, an overriding goal of all of the road safety projects has been to organize the extant knowledge on road safety programs of proven effectiveness in a manner that will facilitate putting these programs into practice where they are not now in operation.

EMERGENCY MEDICAL SERVICES

This is the final Report of the Emergency Medical Services Project which had as its aim the examination of the emergency medical service systems of the participating countries to determine their effectiveness in providing medical treatment to persons injured in vehicle crashes. Procedures and practices found to be working effectively in one country were to be studied and communicated to other countries where they might be implemented with similar results.

The reason for including EMS in a road safety program is readily explained. In NATO as well as non-NATO countries, a vast amount of effort is being expended toward reducing the numbers of vehicular crashes and the resultant injuries and deaths. Much effort is directed toward preventing crashes through such programs as improved driver education. Much effort is also directed toward increased protection of vehicle occupants in crashes, such as by increased use of seat belts and better vehicle structures.

Notwithstanding these efforts, vehicular crashes continue to occur in great numbers, and deaths and injuries are not being reduced to the extent that experts believe possible. Many victims of traffic crashes die on the scene or shortly thereafter, or suffer severe and possibly permanent disabilities because they do not receive adequate emergency medical care in a prompt and effective manner. They die or are maimed despite the fact that within the medical community of almost all nations, the state-of-the-art of emergency medical care is well developed. How then can this expertise be more fully applied to aid victims at road crash sites and thereafter until they reach definitive medical care in a hospital?

PROJECT HISTORY

The first phase of the project which started in August 1971 was a preliminary screening to ascertain the scope and nature of the EMS practices in different countries. Toward this end, the project staff developed a basic EMS questionnaire. This document was devised to elicit information in seven broad areas of the system, all concerned with the external response system and its connection with the medical facility. The responses to this questionnaire are analyzed in Section I of the report.

In February 1972 a working session of the project was held in Brussels. After reviewing the results of the first questionnaire, the group formulated a small supplementary questionnaire consisting of 19 elements. Results of this latter effort led to the idea that a vastly expanded evaluation methodology might be developed for application at the national level. This development and the results are discussed in Section II of the report.

In early 1972, a second Emergency Medical Services Project was activated under the CCMS Advanced Health Care Pilot Study. Very close liaison was maintained between the two to prevent duplication or competitive efforts. In October of that year, it was agreed that the EMS Project under the Road Safety Pilot Study should continue to develop the evaluation methodology until the Spring of 1973. At that time and with the final Project Report, all EMS activity phased into the Advanced Health Care Pilot Study.

ORGANIZATION OF REPORT

This report of the Emergency Medical Services Project is organized in three sections.

Section I

In May 1972, the leaders of the various projects comprising the Road Safety Pilot Study addressed a public meeting in Washington, D.C., U.S.A. The report of Dr. Guiseppe Spalatin, the EMS Project Leader, describes EMS systems and project activity up to then, and is presented here as the first section of this report.

Section II

Subsequent to the various project activities reported by Dr. Spalatin, the U.S., as Pilot Country, developed a methodology with which a national, state, or local government might evaluate its EMS programs. The evaluation methodology and some preliminary results of its trial applications are presented in this section.

Section III

Based on the total experiences gained during the project, a series of recommendations is presented in this section. Some recommendations are designed for implementation by any single country; others are directed toward multilateral action.

ACKNOWLEDGMENTS

The principal worker on the project for a period of over two years was Dr. Guiseppe Spalatin, Ministry of Health, Italy. Dr. Spalatin traveled extensively in search of data and other information. He has written knowledgeable papers on Emergency Medical Services and one is included as a portion of this report.

Numerous other persons from the participating nations gave dedicated support to the project. Mr. Rene Coirer of the Government of France was especially helpful in his willingness to provide information and to read and comment on much of the material which the project workers developed. Others who made valuable contributions include Dr. E. do Amaral of Portugal and Dr. Jurgen Killian and Mr. Walter Teuber both of the Federal Republic of Germany.

Special mention is made of the efforts of Dr. William R. Gemma who rendered invaluable time and effort to the project. Dr. Gemma was made available to the U.S. Department of Transportation by the U.S. Department of Defense through the office of the Assistant Secretary of Defense (Health and Environment), Dr. Richard S. Wilbur and the Surgeon General of the U.S. Air Force, Lt. General Robert A. Patterson.

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SECTION TWO

EVALUATION METHODOLOGY

SECTION ONE

Emergency Medical Care*

An attempt to define some basic concepts about emergency medical care should not be considered out of order, insomuch as theoretical considerations have very often practical implications, and one of the main prerequisites for the solution of a problem is a clear definition of its terms. In our issue, that is the organization of emergency medical services, it appears necessary, first of all, to define what an emergency medical condition is, at least in order to be able to plan the size and quality of services according to the needs, and to avoid overloading them with unnecessary tasks, as can very easily happen, due to the high emotional content of sudden medical occurrences and to the fact that the general public is not sufficiently trained to identify a true emergency. From the point of view of the medical condition itself, obviously, the main feature is not its intrinsic clinical severity, but the significance of the time factor for the preservation of life and function. In other words, in such events the amount of time elapsed from the moment the condition occurs to the moment temporary, respectively, definitive medical care is undertaken, has a substantial influence on the prognosis "quoad vitam et quoad functionem," that is, on the chance of survival and on the outcome of treatment. As a consequence, the point of view of first aid and transportation, transport means, besides being promptly available and easily accessible, should be adequately manned and equipped in order that the eventually necessary temporary treatment could be undertaken immediately on the spot and en route. From the point of view of hospital facilities, emergency cases constitute unscheduled and unannounced admittances, which need immediate diagnostic and therapeutic attention in the most disparate branches of medicine, surgery and various specialities.

On the basis of abovesaid considerations emergency medical care can be conceived as a special system, separated – up to a point – from the general medical care system, although strictly correlated to it, as both systems have in common the most part of facilities, techniques and personnel. The peculiar characteristic of the emergency medical care system is that it has to act quickly and well, it must be organized in such a way as to strike the right balance between two antithetical needs, that is "quickness" and "high quality" of services.

Although in all developed countries of the world the health care system in the last decades has advanced greatly, surprisingly almost everywhere emergency medical services have lagged far behind, and must be considered inadequate both in quantity and quality. One of the reasons for this could be envisaged in the emphasis that up to now has been put almost only on rapid transportation and quick delivery of the patient to the nearest emergency room, more on the basis of emotional than of rational considerations, without paying due attention to such essential items as stabilization of general conditions, administering emergency care in transit, responsible choice of the most appropriate facility to which the patient should be delivered according to its capability.

Moreover, the emergency medical care system is more complex than other health care services, as many different factors are involved, which complicate the evaluation of its effectiveness. Only very recently efforts have been made in order to devise a methodology for evaluating its capability and responsiveness, taking into account not merely individual elements of the system but the system as a whole, through a complete systems analysis by means of models.

Indeed, from the moment a need arises and is perceived, to the moment it is satisfied by delivering the patient to definitive treatment, emergency medical care constitutes a single chain of actions, whose several individual components are strictly interrelated in such a way that the total strength of the chain is that of its weakest link. Strengthening a

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*This report was given by Dr. Guiseppe Spalatin at a public meeting of the leaders of various projects comprising the Road Safety Pilot Study held in May 1972 in Washington, D.C.

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single element separately from the others, and without considering possible collateral effects could be, therefore, completely unuseful if not even detrimental.

Another consideration that should be kept in mind while analyzing emergency medical services is that they are "medical" services: that is, whatever individual action, from the first telephone call, to the application of first aid procedure, to driving the ambulance car, has medical implications, and should be medically directed in order to assure that it is performed above all according to the medical requirements.

An analysis of the phases through which an emergency medical situation is dealt with could illustrate some of the above mentioned points.

The first phase could be called the "phase of detection," since it goes from the moment the need arises to the moment it is perceived by the patient or by another person. This is a "lost" time, since the patient has not yet entered the system, which is not alerted in any of its components.

The second phase could be termed the "phase of reporting," and goes from the time the need is perceived to the time it is reported to the responsible agency. At this moment the emergency medical care system is alerted and begins to function.

The third phase comprises the time spent from the alert to the arrival on the spot of qualified medical help, generally an ambulance, that should be adequately manned and equipped for dealing with the situation. In this phase the system has not yet taken over emergency care; therefore, in the meantime first aid when necessary should be rendered by those first on the scene, generally laymen.

The fourth phase is that of transfer, comprising extrication and eventually stabilization of general conditions and en route treatment by trained ambulance personnel. Of course, from the beginning of this phase the emergency medical care system takes over the responsibility, and is now fully functioning.

The fifth phase is that of delivery to definitive medical treatment, generally through admission to a hospital and dispatch to an emergency department.

In all these phases much could and should be done in order to reduce time losses and to improve the performance. The first phase could be substantially shortened, for instance, by health education aimed at teaching correct illness behavior, or, as far as traffic accidents are concerned, by ground or air patrolling at least in particular situations, by TV surveillance at selected spots, by electronic alarm devices and so on. Immediate reporting could be made easier by providing roadside communication instruments (telephones or radios), by centralizing dispatching facilities, by arranging a common emergency telephone number for the whole country or at least for single areas, in which case it should be widely advertised and clearly displayed on roadsigns and on telephones. Emergency calls from public telephones should be made possible without the use of a coin, the existing communication facilities should be optimally exploited (signs indicating direction of nearest telephone), the public should be taught the essential role it can play in this respect. In order to allow an exchange of vital information from the caller to the system and vice-versa, as far as possible two-way communication should be provided.

The prompt arrival of qualified medical help is of paramount importance and could be facilitated in several ways, through centralization of dispatching facilities in order to avoid confusion and duplication, radio communication between ambulances and dispatcher, convenient location of ambulance stations, on-vehicle warning devices (light and sound) intended to grant right of way, clearing of traffic lanes and remote control of street lights, routing instructions by radio to ambulance drivers in order to minimize driving time, preferential routes and so on. In urban areas with heavy traffic, right dimensioning of ambulance cars could be of great help in this respect.

In several cases, above all in traffic accidents and other events in rural areas, it would prove impossible for the ambulance to arrive in a sufficiently short time while immediate emergency help could be of decisive importance. On the other side, inadequate handling of injured could be detrimental. Therefore the general public, and particularly licensed drivers should be taught emergency procedures through educational programs. In this regard, the stress should be put on few vital acts, such as extrication, positioning, protection against exposure, bleeding control, warning to incoming traffic, while other procedures, and above all transportation by inadequate means, should be discouraged. There are reasons to doubt that so-called "secourism" has real practical usefulness. Referring to such programs for the education of the general public, therefore, it seems advisable, for psychological reasons, to use generic expressions like "emergency procedures" or "rules of behavior," and avoid terms like "first aid" or "medical help."

Selected professional groups, above all the police, should be given a more extensive training in first aid procedures, followed by regular refresher courses.

In order to facilitate rendering emergency help to victims of traffic accidents, it could prove useful to provide that all four-wheeled motorvehicles should carrycompact kits containing only basic dressing equipment, essentially bandages, pads,plaster and scissors, as well as one or two plastic "blankets" for protection against exposure. Some of such kits have been devised in the convenient form of a pillow which could be very effective in encouraging their adoption by motorists, while hard metal boxes would be less acceptable. Medically qualified people should be asked to carry more elaborate kits on board of their cars, and Medical Associations could be helpful in providing them at relatively low cost. Also police patrolling cars should carry first aid equipment.

The fourth phase is characterized by the fact that the ambulance has arrived on the scene; the emergency medical care system takes over all responsibilities and begins operating fully. Different emergency situations require different actions, but the general principle is the same: the patient or victim has to be carried on board and transferred to a suitable medical care facility. In case of accident victims, extrication may be necessary, and appropriate tools must be available. Prior to removal of the injured, stabilization of general conditions may be necessary on the very spot; therefore part of the ambulance equipment should be removable for use outside the vehicle. The ambulance must carry on board all necessary equipment for administering emergency medical care in transit, and ambulance personnel must be adequately trained both in rescue and first aid procedures. Of course, equipment and training should be matched in order to avoid both inutilization and dangers deriving from improper maneuvers. In this respect a certain degree of standardization of ambulance equipment is most desirable, as ambulance personnel could not be expected to be able to use correctly a great variety of instruments. The supply of electric power, plugs, pipe connections and so on must be standardized, and all containers should have transparent lids and easily recognizable markings for the identification of content.

What has already been said about facilitating ambulance transit applies to the transfer phase also, although in this latter respect the emphasis should be put more on en route care than on speed. Smoothness of driving would allow more accurate handling of the patient, and would reduce the risk of successive accidents to which emergency vehicles are prone. (Of course, effective internal protection through recessions, paddings, restrait devices and so on should be provided for both personnel and patients.)

As for the admission of patients or injured to an emergency facility, it is almost generally agreed that stops at intermediate first aid stations for provisional treatment are not advisable and would mean at least a loss of vital time. Indeed, such intermediate stations could not possibly be adequately equipped and manned, and their intended function can be completely replaced by the ambulance car. Patients should be delivered directly to selected hospitals, even if this implies a substantial prolongation of transport time, provided, of course, that preliminary stabilization and adequate care in transit are granted.

The dispatching center should be responsible for choosing the proper destination, and for giving advance warning to the hospital.

With the delivery of the patient or injured to the emergency department the prehospital stage of the emergency medical care system ends and begins the last phase which is concluded when definite care is undertaken. Alas, from the moment the ambulance reaches the hospital and the patient is admitted to the emergency department, to the moment appropriate medical treatment is started several critical delays could intervene, which must be minimized at all costs. In small hospitals emergency departments are usually poorly equipped and staffed, and often more time is lost in summoning doctors on call-watch than would be spent in reaching a better equipped hospital. In this respect too advance notification is of paramount importance, and should provide not only a general warning but all possible information about the conditions of the patient. Not infrequently, and especially in the case of severe traffic accidents, multiple traumatism (for instance, face trauma) require specialist advice, that can not possibly be granted at short notice in a small unit.

Such considerations make imperative a categorization of facilities according to their capability (equipment and staff) in order to allow the dispatching center to make the right choice while directing the ambulance.

Of course, adequate professional education of all medical and paramedical personnel in emergency care procedures is of paramount importance, although at the present it does not seem that university curricula in most countries give due attention to the subject. Moreover, since emergency medical situations are of the most different kinds, and emergency departments can not be permanently staffed by a numerous team of specialists, tentative efforts are made in order to organize postgraduate courses on all aspects of emergency care.

What has been said till now gives, however, only a theoretic representation of an emergency medical care system, which outlines the main requirements but does not indicate how they should or could be satisfied.

Most problems remain open, first of all that of the real effectiveness of each individual element of the system related to its cost in absolute and in comparison with the effectiveness of other elements.

As already stated, such problems could be solved only be means of a systems analysis, like that one which is now in progress in this country.

Presently, everywhere in the world the urgent need is felt to improve emergency medical services. It derives from two main factors:

(1) the increasingly higher incidence of emergency cases, such as cardiac and respiratory conditions, and of accidents of all kinds, above all traffic accidents;

(2) the increased possibility of saving life and function, brought on by rapid advancement in several fields of medical care.

However, available funds and resources must be utilized rationally, in order to obtain maximum results with minimum effort.

For this reason, pilot studies on emergency medical services have been started in the frame of two CCMS projects, namely "Road Safety" and "Advanced Health Care Delivery Systems." The former is intended to improve emergency medical care to victims of traffic accidents, the latter deals with all other aspects of emergency health care in the general context. In order to avoid overlappings and duplications between the two studies, it was proposed that the same country – Italy – should be in charge of both EMS subprojects.

Work on the EMS Pilot Study within the Road Safety Project began in August 1971.

The questionnaire was aimed at:

(1) assessing the present situation of emergency medical services in the participating countries, from the point of view of national policies, available resources and organizational features, in order to find out possible common or different trends;

(2) exploring future organizational and operative developments of the services in question;

(3) detecting relevant EMS problems already subject to research in the respective countries, identifying special areas of interest for research and practical testing, especially from the point of view of cost/efficiency analysis.

Till now eight countries have sent back the filled in questionnaire, namely: Belgium, Canada, Denmark, Federal Republic of Germany, France, Italy, Netherlands, United States of America. They amount to a sufficiently representative sample for a summing up of the situation, comprehending a total population of about 420 millions inhabitants.

The questionnaire is subdivided into the following main parts:

(1) *General Organization*: devoted to the assessment of national policies regarding legal status, centralization or decentralization of services, responsible agencies, sort of personnel employed, financial arrangements, and so on.

(2) *Regulations:* intended to specify, if any, standard minimum requirements for ambulance vehicle (design and layout, performance, materials, dimensions, equipment including stretchers, communication facilities).

(3) *Personnel:* aimed at describing basic educational and professional qualification of ambulance crews, degree of training in emergency procedures of medical and paramedical personnel, schemes for first aid training of the general public or specific groups.

(4) *Ambulance Services*: intended to evaluate present qualitative and quantitative emergency facilities in the prehospital stage.

(5) *Hospital Emergency Departments*: intended to evaluate emergency facilities available in hospitals, categorization and distribution of hospitals, intermediate stations, and so on.

(6) *Detection and Reporting*: meant to study current and improved systems aiming at shortening time intervals between occurrence of the need, entering the system and meeting of the need, as well as at assuring quick availability of relevant information and correct decision making.

(7) *Operative Evaluation*: directed to a critical estimate of present solutions, and proposals, for further research and analysis.

The summing-up of the replies to the questionnaire shows that, in almost all participating countries – with few exception – the organization of Emergency Medical Services conform to a general pattern which can be summarized as follows:

(1) There is neither an established, centrally directed national policy, nor a pre-arranged program for the development of Emergency Medical Services.

(2) Operative responsibilities are shared among several agencies, probably without a clear definition of functions and terriorial jurisdiction; while State, local authorities, different bodies (police, fire-brigades), voluntary non profit-making associations (Red Cross and others), private profit-making organizations are all active in the field, it is not evident if and how coordination is assured.

(3) Apart from the amount of funds available for EMS, financial provisions do not appear to be rationally adopted according to real needs, and probably depend on fortuitous considerations and circumstances. No schemes for free-of-charge emergency care are mentioned.

(4) Ambulances services employ various kinds of personnel, with different degrees of qualification; minimum education and training requirements appear to be rather vague, and in most cases inadequate; duration of training, when required, varies from short courses (few hours) to an extensive 3-years qualification (in project in one of the countries). It does not appear that efforts are made in order to match personnel training with emergency equipment and supplies carried on board.

(5) In almost all countries efforts are made in order to train the general public and/or special groups in first-aid procedures; however, the practical usefulness of such training is uncertain (in an instance the fear is expressed that it could be "dangerous"). Anyway, no or little efforts are made in order to provide basic first-aid and anti-exposure equipment to four-wheeled motorvehicles.

(6) There is only a partial standardization of minimum requirements for ambulances (type, dimensions, performance, construction materials, lay-out, internal comfort, thermic conditions, sound-proofing, internal safety, equipment and supplies, rescue tools).

(7) When stated, the total number of available ambulances lies below the estimated optimum standard per population.

(8) While two-way radio communication is generally available between ambulances and dispatcher, non provisions are made in order to provide competent medical advice, decision and supervision at all stages of the operations ("medicalisation").

Direct communication between hospitals and ambulances is practically non-existent. Only in a few cases hospitals are responsible for running ambulance services or providing qualified personnel when needed.

(9) While in some countries promising researches are in progress on various organizational and operational aspects of first-aid services, it is felt that there still many problems which are far from being solved, and that actions are often taken according to traditional considerations or empirical appraisals, but without real experimental testing and comparative trials of alternative solutions.

Several subjects of research and practical testing have been chosen, which were either proposed by single countries or deduced from the answers to the questionnaire, as relevant for getting a better insight into relevant problems of emergency medical services for traffic victims. Here are some examples:

(1) Analysis of average time elapsed (in typical or atypical circumstances): from accident to detection – from detection to reporting – from reporting to arrival of ambulance – from arrival of ambulance to hospital – from arrival in hospital to delivery to definite care – intended to gain information about relative importance of time losses.

(2) Quantitative and qualitative analysis of emergency calls received through unified call systems in order to evaluate relative effectiveness of multipurpose or single-purpose systems, advise standard actions to be taken by the system, suggest improvements. A general study of various types of dispatch centers has been also proposed.

(3) Analysis of fatality rates among traffic accident victims, with special consideration of deaths on the spot or during transport, in areas provided with different ambulance and emergency facilities.

(4) Analysis of time of death after the accident and cause of death on the spot and during transport, in order to assess relative significance of transport speed, ambulance equipment, training of ambulance personnel in life-saving procedures.

(5) Evaluation of effectiveness of "secourism," in order to reduce: death rates – severity of injuries – permanent damage.

(6) Evaluation of effectiveness of "first-aid kits" carried by ordinary cars, cars of medical (paramedical) personnel, police etc.

(7) Analysis of the effectiveness services like the French "unites mobiles hospitalieres," "medicalisation de la chaine des secours," and "Services d'aide medicale urvrntee," with particular reference to radio-communication between ambulances and hospitals and telemetry of vital functions.

(8) Study and evaluation of systems aiming at facilitating transit of ambulances in traffic (electronic street-light control, etc.).

(9) Studies on improved minimum standards for ambulances: design and performance – lay-out – equipment and supplies.

(10) Evaluation of helicopter use for transportation, and analysis of related problems: – landing places at both ends (roads – hospitals), – approach and landing aids (maps, signals)–utilization of military helicopters – comparative use of helicopters and fixed wing aircraft – linkage between ambulance cars and helicopters (entering urban areas?).

(11) Studies for standardization of relevant items, such as: – autopsy reporting – collection of EMS data – time-phased, post-crash medical data – reporting of injuries by ambulance personnel to physicians for preliminary diagnosis and care recommendations – adoption of a unique emergency certificate (f.i. WHO).

(12) Methodological proposals for setting up comparable models for an analysis of Emergency Medical Service Systems.

SECTION ONE

EMERGENCY MEDICAL CARE

SECTION TWO

Evaluation Methodology

BACKGROUND

The improvement of community Emergency Medical Services (EMS) has been a topic of concern at all levels of health care provision in this country and abroad. In this regard, the question arises as to whether adequate services are being provided at regional, state, or local levels of activity to meet defined specific objectives. One reason for a deficiency in EMS is the difficulty in developing an acceptable method for evaluating established EMS systems. This difficulty stems from the problems encountered in assessing the quality of medical care in any aspect of a health care delivery system, including, but not limited to accessibility to the system; availability of quality health services; adequacy of care rendered; comprehensiveness of the system; and finances to insure continuity and improvements in the delivery of urgent medical care.

The major purposes of an EMS evaluation methodology are to determine whether specific objectives have been met and whether the adequacy and quality of the established system are sufficient in the delivery of urgent medical care to selected populations in a geographic area. A properly functioning EMS system must be capable of:

1. Promptly dispatching an adequately equipped ambulance.
2. Providing appropriate treatment to the injured at the scene of the accident.
3. Stabilizing the patient's condition en route to the hospital.
4. Selecting the hospital best equipped to handle the problem.

Traditionally, EMS systems have been evaluated by measuring such resources as ambulances, personnel, equipment, training courses and communications, against government published and recommended EMS standards. However, this tells little of total system effectiveness; that is, how many fatalities have been prevented and how many serious injuries are mitigated.

Attempts have been made to evaluate an EMS system mathematically by using factors that directly determine its effectiveness. Some of these factors include survival rates, extent of recovery, lessening of suffering, and reduction of death and disability. These attempts have proved impractical because of the difficulty of measuring patient outcomes from existing community EMS systems in order to make comparisons with an optimal system.

To overcome these difficulties, an evaluation methodology using parameters which are assessible in terms of their impact on system effectiveness, and which can be related to the elements and sub-elements of the EMS system has been developed.

This evaluation methodology presents a coherent approach to a difficult problem. Through its use the performance and benefits of an ongoing EMS system can be assessed, missing or weak links in the overall EMS chain of events can be identified, costs for alternative improvements can be estimated and priorities for implementing improvements can be selected.

DEVELOPING THE EVALUATION METHODOLOGY

An analysis of the answers received in the initial EMS questionnaire sent by Dr. Spalatin of the Italian government (discussed in Part I), pinpointed certain obstacles to a successful EMS evaluation methodology. It became evident that the objectives for which the evaluation methodology is designed, as well as the techniques and guidelines relating to how and where to use the methodology, needed to be clearly spelled out.

With this in mind, the original questionnaire developed by the Italian government was reorganized by arranging the questions into categories representing system elements and subelements. This reorganization allowed each element in the EMS system to be evaluated separately. Additional items were included to give a more comprehensive description of the EMS organization, the resources, and the procedures utilized. This product was then field tested.

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The first test of the methodology* utilized a newly developed two-dimensional matrix format for the questionnaire. In this format, the set of effectiveness parameters (see listing below) having an impact on the overall quality and effectiveness of the EMS system was listed in a horizontal direction. The questions, arranged by system elements and subelements were listed in a vertical direction.

Such effectiveness parameters include:

- Extent of System Accessibility
- Time Factors
- Quality of Emergency Care
- Quality of Emergency Equipment
- System Audit/Monitoring
- System Cost

Elements comprising the EMS system include:

- Organization
- Personnel (Training, Staffing, and Deployment)
- Equipment
- Operational Procedures
- Records and Statistics

See Figure 2, page 16, for example. This arrangement made it possible to evaluate the system by performance factors for each of its elements. The matrix format as well as the elements and parameters are further explained in the following section titled Description of Evaluation Methodology.

Virginia Test: The initial field test, as well as the subsequent test in Arizona, was conducted to determine primarily the answerability and completeness of the questions, and the acceptance of the two-dimensional matrix concept. No attempt was made to evaluate or even obtain specific EMS information concerning these states. The conclusions drawn from the test conducted in Virginia were:

1. The two-dimensional matrix concept of the evaluation methodology was acceptable and was considered a valuable tool. With minor changes, all of the questions were answerable.
2. A trained team should visit the site to gather data rather than collect it through the use of a mailed questionnaire. In this respect, the term "questionnaire" should be changed to "survey guide."
3. The trained team should have expertise in such disciplines as comprehensive health planning, systems analysis, and communications technology.

Arizona Test: The Arizona test of methodology consisted of a two-day comprehensive and detailed discussion of the Survey Guide revised as a result of the Virginia experience.

The discussions held with representatives of the Arizona Departments of State Health and Public Safety provide the following observations and suggestions:

1. The questions contained in the Survey Guide were comprehensive and answerable.
2. The matrix and impact category approach to an evaluation methodology was operationally and mathematically sound and represented a viable approach to a quantitative evaluation.
3. The answers to the questions should be qualified as much as possible to permit a simple mathematical procedure, computerized if possible.
4. A bias may be inadvertently inserted because of a subconscious attempt of the persons being interviewed to make their system appear favorable. To offset this, a suggestion was made to include surveys at the lower, operating levels.

Discussion With Allies: Based on the general acceptance of the methodology in Virginia and Arizona, the study team felt that the methodology was sufficiently developed for presentation at the CCMS level. Thus in early October 1972, the first revision of the methodology was reviewed extensively with officials from the French Ministry of Health, and the Automobile Club (ADAC), Federal Republic of Germany. In both instances favorable comments were received on the general concept of the methodology and its application to CCMS nations and other nations concerned with improving their EMS systems. Later that month, the evaluation concept was approved by participants of a CCMS Advanced Health Care Pilot Study meeting in San Francisco.

Final Testing: A final version of the survey form was then prepared for use in field tests during which actual data on EMS systems would be collected. The new form included a revised layout clearly indicating the impact categories related to each question, the weighing to be given each answer, and ample space to enter the answers or include other pertinent narrative description.

Time constraints made it impossible to test the methodology in the nations participating in the Road Safety Study. Therefore, arrangements were made to test the evaluation methodology in three states in the U.S.A.; Pennsylvania, New York, and Georgia.

Whereas previous field tests served primarily to check the validity and acceptability of the evaluation concept, the latter tests checked the feasibility of implementation and provided data necessary to develop guidelines on use of the Survey Guide. No attempt was made to provide a description of the existing or planned EMS systems in the test states.

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*Conducted in the Commonwealth of Virginia, U.S.A. in September, 1972.

Pennsylvania Tests: The first of the final tests was conducted in December 1972, at the State Department of Health in Harrisburg, Pennsylvania.

Representatives of the EMS office provided the study team with a number of documents which were of considerable value in defining the general legislative and organizational environment in which the existing EMS system operated and what was planned for its future. These documents included a preliminary comprehensive EMS plan, a set of proposals for regulating and licensing ambulance services and ambulance personnel, and a proposed Ambulance Services Act. Also provided were a status report on emergency medical and health services and a survey and directory of ambulance services in Pennsylvania. The on-site visit, limited to one and one-half days, provided additional information supplementing the printed data. The survey disclosed a relatively high degree of fragmentation of the entire EMS system throughout the state. This was possibly the result of extreme individualism in the implementation and operation of community EMS services at the local level, coupled with a lack of existing or proposed legislation to integrate the various individual systems.

New York Tests: The second of the final field tests, also during December, was conducted in Albany at the New York State Department of Health, Division of Medical Care Services and Evaluation, Bureau of Emergency Health Services.

The New York State officials provided the study group with information on existing and proposed legislation, local health planning by region and county, raw and evaluated statistical data, response time information, and detailed data on ambulance services and ambulance runs.

A high degree of confidence was expressed that proposed legislation which would extend the scope of the State's regulatory and enforcement authority for services, personnel, communications, and equipment would be passed. This situation highlighted the dilemma inherent in surveying a state whose EMS systems are being or are about to be changed. Obviously the report must adequately consider imminent major changes.

Because three full days were available for the New York State survey and the data gathering was concentrated in one state office, it was possible to complete the survey guide in relatively great detail. In analyzing this information, it became evident that a difference existed between what the State thought was being planned at the local level and what was actually implemented. This indicated that a severe bias could be introduced into an evaluation when using information obtained only at the State or comparable levels of activity, regardless of how complete and detailed the information might be. To offset this, in the third and last field test of the methodology, visits to the local operational level were planned.

Georgia Tests: The third and final test of the evaluation methodology was conducted in the State of Georgia in late January 1973. The State Office of Highway Safety, assisted by the Department of Human Resources provided the information.

The Georgia field test was particularly oriented towards determining which problems would arise in applying the evaluation methodology to a State in which there was both major activity on the State level in funding and advisory planning for EMS and also considerable local and regional planning council activity. Arrangements for the test were made through the Office of Highway Safety which administratively controls Department of Transportation EMS funds spent in the state. Because this Department was the most active of all agencies providing such funds in the State, this was a valid approach. Georgia's EMS plan at the time was in the process of being coordinated with participating state agencies. An ambulance service law was in force and a resolution had been proposed to amend the State constitution to confer upon local jurisdictions the power to provide public health facilities and services, including hospitals, ambulances, and emergency rescue services. The legislative and planning postures of this State were complicated by a recent administrative reorganization of the state government which affected the boundaries and structure of the local or regional planning entities.

This situation made the current organizational, administrative, and legislative posture difficult to assess during the visit. The experience stresses the importance of obtaining and carefully reviewing all pertinent available documentation prior to the on-site visit. Plans, existing legislation, proposed legislation, organizational structures, listings of agencies and services, listings of regional and local advisory councils would all be helpful. The Georgia field test clearly showed that such a prior paper survey will save time and eliminate confusion since it enables the team to begin the visit with a clearer understanding of the EMS picture.

Within the State of Georgia there are many local and regional planning and advisory entities, some of which appeared to be quite active. The detailed functions, areas of operation, relationship to each other and to state planning and advisory groups could not be clearly analyzed in the time available. This experience suggested that after the visit to a State level, there was a need to visit two or three of the regional and local planning and advisory entities. Also, the function, activities, composition, and jurisdictional area of these regional and local groups are best understood by someone active in a State's EMS work. Therefore, the survey team should be assisted by such a person.

Summary: The preliminary and final field tests of the evaluation methodology provided significant information, not only on the concept and structure of the evaluation methodology, but also on its implementation and the subsequent analysis and evaluation. The conclusions and recommendations have been incorporated in the methodology and the guidelines for its application described later in this report.

With this experience and the resulting changed evaluation methodology, the survey team held discussions with European representatives in order to determine if the assessment model was ready for use by CCMS nations. The Ministry of Health, and Transportation officials in the Federal Republic of Germany and in Belgium were consulted in March 1973. Based on these discussions, a final report of the evaluation methodology was prepared in the summer of 1973. A complete description of the assessment model follows.

DESCRIPTION OF EVALUATION METHODOLOGY

This section describes the general concept, and structure of the EMS Evaluation Methodology. The methodology requires a methodical collection of data followed by a systematic determination of the impact of that data on the effectiveness of the overall system. It uses a Survey Guide, the principal instrument for EMS data collection and Survey Forms, used in the quantitative evaluation. The Guide and Forms are shown in Appendix A. The introduction to that appendix contains definitions of the principal terms used.

The methodology provides officials at national, regional, or local levels of administration with a useful technique for planning, implementing and evaluating their EMS systems. It is designed to:

1. Provide a description and structure of an existing or planned EMS system.
2. Provide a quantitative assessment of that system.
3. Point out deficiencies so that alternative measures can be employed.
4. Provide a basis for obtaining improved equipment and improving operational procedures to enhance the cost effectiveness.
5. Standardize terms and definitions pertaining to component elements and to factors determining quality and effectiveness.

The primary intent of the evaluation methodology is not to render a "report card" appraisal of any one EMS system, but to provide responsible officials with techniques for measuring their system and pointing out where improvement is needed. Ways to improve can come from the study of other EMS systems which, through the evaluation procedure, have been shown to contain superior components. Application of the methodology should be a cooperative effort by the survey team and the management and administrative personnel of the EMS system under review. It is of prime importance that the latter understand that use of the methodology can lead to improvements in their system.

There are two aspects of emergency medical systems which complicate *quantitative* assessment of system quality and effectiveness. First, EMS systems of different nations or states operate within different social, political, and economic structures; different applications of technical and human resources; and different legal provisions and constraints. The systems respond to different needs based on demographic, social, and geographic variances. These differences may preclude a comparative evaluation of the total system. However, the EMS system was divided into distinct operational and administrative elements, each to be evaluated separately. Thus, if conditions preclude a comparative evaluation of one element, e.g., legislative aspects, the other elements can still be evaluated.

The second complication stems from the difficulties in measuring survival rates, extent of recovery from treated medical emergencies, extent that human suffering is minimized and the relation of the above factors to system cost. Obviously these factors relate directly to the effectiveness of EMS. However, an acceptable method of quantifying the extent of recovery, the lessening of suffering and survival rates has not been devised. Consequently, the evaluation is based on indirect parameters whose impact on system effectiveness and quality is in some way quantifiable. This is illustrated in Figure 1.

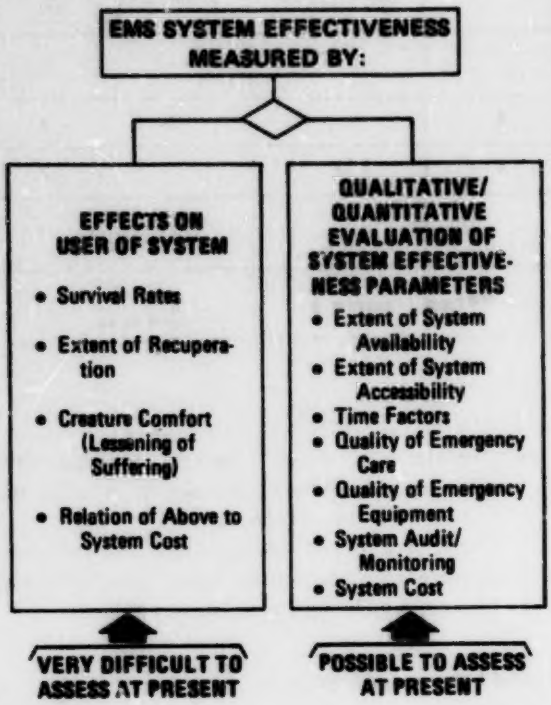
EMS SYSTEM EFFECTIVENESS MEASURED BY:
EFFECTS ON USER OF SYSTEM
• Survival Rates
• Extent of Recuperation
• Creature Comfort (Lessening of Suffering)
• Relation of Above to System Cost
QUALITATIVE/ QUANTITATIVE EVALUATION OF SYSTEM EFFECTIVENESS PARAMETERS
• Extent of System Availability
• Extent of System Accessibility
• Time Factors
• Quality of Emergency Care
• Quality of Emergency Equipment
• System Audit/ Monitoring
• System Cost
VERY DIFFICULT TO ASSESS AT PRESENT
POSSIBLE TO ASSESS AT PRESENT

FIGURE 1.

The effectiveness parameters developed for the methodology are listed in the introduction to Appendix A.

For purposes of evaluation, the EMS system has been divided into the following elements:

- Organization
- Personnel
- Equipment
- Operational procedures
- Records and Statistics

This division facilitates linking the data obtained for each with the effectiveness parameters on which it impacts. For example, data collected under "Equipment" will generally impact on "Quality of Emergency Equipment," "System Accessibility," "Quality of Care" and "System Cost"; data collected under "Records and Statistics" will impact on "System Audit or Monitoring." All of the elements are reviewed and classified in this fashion. The result is a matrix with data grouped by element in the horizontal direction, and by impact category, (effectiveness parameters) in the vertical direction. This is illustrated in Figure 2, a simplified diagram of the overall concept. In actual practice, each element contains a number of subelements, each of which contains, in turn, a series of questions. The answer to each question has an impact on one or more of the effectiveness parameters identified in Figure 2. It should be noted that, although Figure 2 shows a primary impact only, not all of the data items can be given equal weight in the process of system evaluation. When this matrix was expanded into a detailed survey guide a four-level weighting structure was adopted. The weighting criteria are explained in Appendix A, Survey Guide.

USE OF METHODOLOGY

A complete understanding of the instructions and techniques necessary to use the Survey Guide are important to its successful employment. These instructions are detailed and specific as conditions vary between the States and nations where the Guide might be used. The questions in the Guide remain constant, however the procedures for obtaining the answers are flexible because of different organizational arrangements of different EMS systems.

The EMS data collection effort is divided into three phases:

Phase I: Pre-survey data collection
Phase II: Field survey
Phase III: Post-survey data collection

Pre-survey – Phase I

While the field survey may be the most important and most time-consuming, the importance of the pre- and post-survey data collection phases cannot be overemphasized.

Field testing revealed that without rather complete knowledge of the EMS-related environment before making the on-site visit, the survey could not be accomplished in an efficient, comprehensive, and timely manner. It is imperative that the team members performing the survey acquaint themselves with the following items *prior to actual commencement of the survey:*

1. *The Legislative Situation.* Includes existing and proposed EMS-related legislation, as well as legislation being discussed but not yet in proposal form.
2. *The Organizational Structure.* Includes all elements of the state, regional, and local

Effectiveness Parameters / System Elements	Extent of		Time Factors	Quality of Emergency Care	Emergency Equipment Quality/ Sophistication	System Audit/ Monitoring (Feedback)	System Cost
	System Availability	System Accessibility					
Organization	X	X					
Personnel				X		X	X
Equipment		X		X	X		X
Operational Procedures		X	X				
Record and Statistics						X	

FIGURE 2.

organizations related to the administration, implementation, regulation, and operation of EMS systems as well as planning and advisory councils at state, regional, or local levels

3. *EMS Plans.* Includes state or national, regional, and local plans, whether drafted by governmental bodies, professional groups, or regional or local planning councils.
4. *Existing Services.* Includes all existing EMS-related services, e.g., ambulance services, emergency medical facilities, training facilities and courses, communication and dispatch facilities (including unified call systems), and data collection, processing and analysis facilities.
5. *Vital Statistics.* Includes:
    a. Demographic data.
    b. Statistics on injuries and fatalities, both road accident-related and other medical emergencies.
    c. Road statistics (categories, km/category, etc.).
    d. Information pertaining to ambulance runs; include such items as the type of emergency responded to, the response to, the response time, false alarms, etc.
    e. Statistics collected by emergency medical facilities, such as the number of emergency admissions, the time and geographical distribution of these admissions and types of injuries.
6. *EMS-Related Programs.* Includes EMS programs financed by the national or federal government.
7. *Funding.* Includes all available information concerning EMS funds allocated and spent within local or regional jurisdiction, a state or nation.
8. *Regional and Local Councils.* Includes both planning and advisory councils; the number and status, i.e., active or planned.

These data should be organized into categories compatible with the Survey Guide thus facilitating checking and updating during the survey phase.

Field Survey – Phase II

The first consideration of the field survey is team composition. Field testing has revealed that a one- or even two-man survey team is insufficient. Since the EMS data being collected represent a wide range of disciplines and must be thoroughly understood and accurately reported in the Survey Guide, it is recommended that team members represent the major disciplines to be encountered.

As a minimum, the team should have four members. At least one should be an expert from the field of preventive medicine or public health who understands health care organization and delivery systems, as well as the organizational aspects of EMS systems. The second team member should be knowledgeable in the equipment and operational aspects of EMS, e.g., ambulance and other emergency medical equipment, facilities, communications, staffing and training. The third member should be knowledgeable in operations research, and systems analysis as applied to health programs. The team leader, the fourth member, should be capable of augmenting the team as necessary.

Tests have shown that evaluation would be enhanced by also including on the survey team an individual familiar with the EMS activities in the state or nation being surveyed. This additional member would guide the team through the organizational and administrative complexities; provide information concerning the political status of EMS; identify trends and local desires; and point out active EMS programs of importance.

The problem of "report card assessment" was raised during the field tests. However, once the purpose of the survey was explained, active and enthusiastic cooperation was obtained. Therefore, prior to undertaking a survey, appropriate officials should be given a presentation which clearly explains the purpose, and emphasizes the mutual benefits and self-interest aspects.

As noted earlier, it is also recommended that the recording responsibility should be spread among team members. Each member of the team should take notes concerning his own area of expertise. This minimizes the element of fatigue, which was found to be a detrimental factor during field tests.

Length of the survey should allow for verification and any needed explanation of data collected during the pre-survey phase.

Time constraints inhibited the study team during their field tests from obtaining a complete profile of the EMS system at the operating level. While relatively complete pictures of EMS systems were obtained, they were from the top down only. The opinions from representatives of the operating level are essential to insure a balanced picture of the EMS situation.

It is important to identify those questions in the survey methodology which are inapplicable or not answerable in that specific situation. Failure to recognize these and assigning them a low grade instead of noting "not answerable," will introduce a false bias to the evaluation.

Examples are the questions on helicopter operations. In one of the test states a study had shown, given the particular area, geography, highway net and population density, that helicopters would not be effective in their EMS system. Consequently questions concerning helicopters should not be used in that state.

A final consideration is how to evaluate planned as opposed to actual EMS systems. Since the planning situation is different and is constantly changing in every survey area, categorized guidelines are not appropriate. A decision to include or not include the planned systems should be made after the pre-survey information has been reviewed but prior to the on-site visit. This decision should also consider the status of legislative and EMS planning, and should preferably be made with the cooperation of officials in a state being surveyed.

Post-Survey – Phase III

During a field survey, it is possible that team members will learn of reports or information pertinent to the evaluation but not available at the time. Every effort should be made to consider this information. This post-survey information review must be completed before any evaluation attempt is made of the entire study.

EVALUATION

It is recommended that evaluation be performed independently from the field survey or collection phase. To permit this, the methodology has been constructed so that the forms used for collecting data (the Survey Guide presented in Appendix A) and the forms used in mathematically evaluating the information collected (evaluation tally sheets and evaluation summary sheet presented in Appendix B) are separate documents.

It is also essential that grading be accomplished by the entire survey team rather than by one person. This will minimize personal bias, and help in providing a more complete understanding of specific data.

The evaluating team should not grade answers which are incomplete or represent a one-sided view. If, for example, incomplete information concerning the effect of central government policies on local operating units has not been received, even though these policies are understood by the team, grading should not be attempted.

Prior to the evaluation all information and notes should be coordinated and included in the survey form. Once the form is completed and the information is analyzed and assigned a grade in accordance with the guidelines, mathematical evaluation is relatively simple. Instructions for this latter process are in the introduction to Appendix C (Sample Evaluation).

The mathematical evaluation completes a profile of the EMS system in the form of effectiveness ratios. This profile presents a review of the system by effectiveness parameters and in quantified terms of effectiveness for each system element and subelement.

In addition to directions for completing the mathematical evaluation, Appendix C also contains sample tally sheets which have been completed for illustration purposes. This sample should not be interpreted as representative of any state or nation as it is only an illustration of the mathematical evaluation approach.

CURRENT STATUS OF EVALUATION METHODOLOGY

The evaluation methodology developed in this study represents an effort to define a comprehensive framework for EMS systems analysis, evaluation and decision making. Within this framework, the impact of the EMS system is identified, quantified, and evaluated. The results of the evaluation may be used by local administrators and health officials in determining the effect and capability of their existing services and the cost of existing or planned changes. The forms used for collecting data (Appendix A) highlights the records and statistics that should be maintained in order to keep a current profile on EMS activity.

The methodology has been tested in a preliminary way through field visits and discussions with health and transportation officials in several nations. Although a complete application of the methodology has not been made, it appears that this technique can be helpful in planning and implementing EMS system design and improvements at national, regional, or local levels. This is the first attempt to collect and evaluate all aspects of an EMS system and make the data available to appropriate officials in a single, comprehensive report. As this methodology is applied, possible modifications or refinements will become apparent. Such findings should be communicated to other officials considering application of the methodology to their systems.

Although the evaluation methodology was developed to aid victims of traffic accidents, it also focuses on the emergency medical services provided in other medical crises, such as heart attacks, acute illnesses, and trauma. Obviously the community EMS system must respond to all urgent medical situations whether located on the highway or elsewhere. Moreover, any comprehensive EMS system must extend beyond the threshold of the hospital emergency room to aspects of subsequent definitive treatment.

The need to upgrade EMS is apparent throughout the United States and other countries. Application of the evaluation methodology, even in its present preliminary form, will provide the first step for communities, states, and nations to identify the most cost-beneficial ways of increasing the efficiency and effectiveness of their systems. Knowledge of outstanding techniques equipment, facilities, and procedures gained through the results of these applications should be made available to officials planning or contemplating changes to their existing EMS systems.

SECTION THREE

CONCLUSIONS

Conclusions

CONCLUSIONS

In the complex societies of the participating nations, effective emergency medical service systems play a tremendously important role, offering life-saving and disability-reducing services. However, the state-of-the-art of emergency health care delivery includes even more advanced techniques which could be used to save the many lives now being lost to traffic accidents. Recognizing the importance of such services, nations will cooperate in developing evaluative efforts and improvement criteria. It is important then to continue to study these systems in the hope of determining where it is possible to strengthen and improve EMS services.

The cooperative efforts begun under the Emergency Medical Services Project of the Road Safety Pilot Study should be continued under the on-going Emergency Medical Services Project of the Advanced Health Care Pilot Study.

RECOMMENDATIONS

It is recommended that within the Advanced Health Care Pilot Study:

(1) The evaluation methodology be accepted as the international standard.

(2) The Allies conduct a definitive analysis of their EMS systems using the evaluation methodology developed under this project.

(3) Once these analyses are complete, an international exchange of the results of the application of the methodology be made.

(4) The evaluation methodology be expanded to include the hospital elements of the system since the earlier efforts concentrated solely on the external (to the hospital) response system. As a model may be improved by advanced versions, including more detailed analysis of the hospital role in emergency care, expanded tests be conducted.

(5) Each nation assess its training efforts for both professionals and paraprofessionals, noting proficiency requirements rather than curricula alone.

It is further recommended that the Advanced Health Care Pilot Study consider:

(1) A program of interchange of personnel with expertise in EMS in order to gain better insight into world happenings in the field.

(2) The desirability and feasibility of a universal EMS language. If found feasible, plans for its development should be formulated and implemented.

(3) A continuing effort among nations to develop and standardize both the basic and the advanced levels of training for paramedical personnel.

(4) An international effort to standardize design, configuration, and medical equipment of ambulances. Included should be a study of mobile intensive care units.

(5) A program to study, describe, and if possible, unify the various radio frequencies being utilized to voice and telemetric communications within the emergency medical services function.

(6) A program of appropriate research and development on the worldwide problem of early detection of accidents and sudden illness.

(7) The monitoring of national EMS projects with a view toward worldwide implementation where advances occur.

(8) A joint comparative study between a nation which routinely dispatches a physician to a crash-site (e.g., France) and a nation which routinely dispatches only paramedical personnel (e.g., U.S.) in order to resolve the basic question of need.

(9) A cost benefit study for an operational central dispatch system.

(10) A cost benefit study for the use of helicopters on a national basis.

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APPENDICES

Survey Guide Structure And Format

Survey Guide

Evaluation Tally Sheet And Summary Form

Procedures for Completing Mathematical Evaluation

Survey Guide Structure And Format

INTRODUCTION TO APPENDICES

The Survey Guide is a data collection instrument prepared in accordance with the matrix format in Figure 2, Part II. All questions are arranged in categories representing the system elements. (See page 23.) Each element is subdivided into specific aspects of its category as shown below:

SECTION I. **Background Information**
  A. Vital Statistics
  B. Road and Motor Vehicle Information
  C. Traffic Associated Medical Emergencies
  D. Other Medical Emergencies
SECTION II. **Organization**
  A. General
  B. Financial
  C. Legal
  D. Comments and Notes
SECTION III. **Personnel**
  A. Training
  B. Staffing and Deployment
  C. Comments and Notes
SECTION IV. **Equipment**
  A. Ambulances and Rescue Vehicles
  B. Emergency Medical Facilities (EMFs)
  C. Communications
  D. Support
  E. Comments and Notes
SECTION V. **Operational Procedures**
  A. Detection
  B. Reporting
  C. Deployment, Dispatching and Control of Emergency Vehicles
  D. Triage and Treatment at Site
  E. Treatment Enroute to EMF
  F. Triage and Treatment in EMF
  G. Comments and Notes
SECTION VI. **Records and Statistics**
  A. Collection and Formatting
  B. Storage, Processing, and Analysis
  C. Feedback
  D. Comments and Notes

The above listing constitutes the vertical organization of the Guide. The horizontal organization is by impact categories, each category representing one of the effectiveness parameters previously enumerated.

The interrelationship between specific questions and the impact the answers have on overall system effectiveness is indicated on the Survey Guide by the presence of a number in the appropriate coded impact category column. The codes used to identify the impact categories are explained in Appendix A. For example, Question A-1 in Section II, Organization, dealing with policies which exist to cover a general EMS concept or plan, determines to what extent an EMS system is available to the population. Therefore, Question A-1 of Section II is represented by a number in the SAV column. Question A-10 in the same Section, dealing with policies existing to cover communications serving EMS, affects the extent to which the system is accessible, i.e., can be reached by someone seeking entry into it, the overall reaction time and the overall quality of the emergency care. Therefore, Question A-10 is represented in the SACC, TF, and QEC columns. Question A-1 in Section IV, relating to information on statistics compiled concerning events requiring medical assistance, affects the extent to which knowledge concerning the system's operation is obtained. This question is therefore represented by a number in the SAM column.

The impacts of answers on the various effectiveness parameters are indicated by numbers in the impact category columns. These numbers represent a weighting scheme developed to take into account the fact that certain system elements may have a much greater impact on a particular effectiveness parameter than others. For instance, in the example of Question A-10 in Section II, it can be expected that policies covering the provision of communications will have a major impact on the system accessibility and response time and only a

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minor impact on the quality of emergency care. Consequently, this question is represented by a weight of 3 in the SACC and TF columns and by a weight of 1 in the QEC column.

Whereas the grading will vary from survey to survey, the weighting of the impact of each question on the various effectiveness parameters can, to a large degree, be assumed to be independent of the locale of the survey. For example, the existence, scope and extent of policies covering various elements of the EMS system will, in all cases, have a major impact on system availability, and the questions pertaining to subelement IV-C, Communications, will always have a major impact on system accessibility and response time. It was therefore possible to incorporate the weighting structure into the survey form itself.

To permit a quantitative evaluation of the data obtained using the Survey Guide, and fitting that evaluation into the two-dimensional matrix structure of the Survey Guide, a five-level grading system has been developed. The grading criteria are shown in the introductory page to Appendix B. This grading system, when used in conjunction with the four-level weighted impact categories marked on the survey form, is designed to result in quantitative values arranged in the same matrix format as the survey form.

To avoid giving the survey a "report card" aura, it is essential that the entire mathematical evaluation process be conducted separate from the information-collection process. A separate set of forms has been developed for the evaluation of answers obtained during the survey. These evaluation forms representing the mathematical evaluation section of the methodology are also shown in Appendix B. They consist of evaluation tally sheets on which each question is represented by one-line entry on a section-by-section and group-by-group basis. The tally sheet organization corresponds precisely to the Survey Guide organization, thus representing a quantitative overlay for the qualitative Survey Guide.

Upon completion of the survey, each question answered is assigned a grade which is entered on its corresponding place on the tally sheet. The basic quantitative value unit is termed the "score", which is the product of the grade and the weight shown in the tally sheet. The weight on the tally sheet corresponds to the weight given that question on the survey form in each applicable impact category. These tally sheets show a maximum possible score, i.e., the product of the highest grade (4) and the weight for each question.

Provisions are made on the tally sheets to add vertically the actual and the maximum possible scores for each subelement. Elements are called "Sections" and are indicated by Roman numerals. Subelements are called "Groups" and are indicated by capital letters.

To avoid penalizing the system for questions which may not be applicable or which, for reasons not affecting system effectiveness, cannot be answered, provisions are made to delete these questions from scoring. This is accomplished by assigning a grade of N/A (not applicable or not answerable). The maximum possible score of questions graded in this manner are then subtracted from the vertical sum of maximum possible score. Once the tally sheets have been completed and all scores entered for each group, the results are entered on the Evaluation Summary Sheet (last page of Appendix B).

Establishing vertical and horizontal sums and obtaining indices (ratios) between actual and maximum scores) are accomplished on this Summary Sheet. Use of the Summary Sheet permits horizontal sums of actual and net maximum possible scores on a group (subelement) basis and on a section (element) basis, as well as vertical sums of these on an effectiveness parameter basis. The desired index of effectiveness for each combination is represented by the ratio of the actual and the net maximum possible score. A total index for the entire system, if desired, can be obtained by summing all the actual scores and all the net maximum possible scores (either horizontally or vertically) and dividing the former by the latter.

A sample of a completed set of tally sheets and Summary Sheet is shown in Appendix C. This sample does not represent an evaluation of an actual EMS system, since any such evaluation would be misleading. It represents merely an illustrative example and is based on a composite of all answers received during these tests.

The Evaluation Summary Sheet serves to illustrate the inherent value and flexibility of an evaluation system based on a two-dimensional matrix concept. In addition to being able to arrive at an overall effectiveness index for the entire system, it is possible to obtain indices separately for each major element, for each subelement (horizontal sums) and for each impact category, i.e., each effectiveness parameter (vertical sums). It is thus possible to obtain a vertical profile of a particular EMS system by its component elements as well as a horizontal profile showing in category the system is most effective. Specific strengths and deficiencies can thus be pinpointed and quantitatively compared with those of other systems which have been evaluated for the purpose of mutual assistance in improving the EMS systems of states or nations participating in a cooperative survey effort.

APPENDIX A

Survey Guide

In this appendix the Survey Guide, representing the principal EMS system data collection tool, is presented together with a definition of the various terms used throughout this methodology and the weighting and grading criteria used in the evaluation process.

The meaning of the EMS system elements, the effectiveness parameters and the principal terms used in the survey guide is given. Omitted from these definitions is the precise meaning of such terms as injuries, traffic-related fatalities, road categorization, hospital categorization, etc., as these are matters which cannot be settled unilaterally but must be established and agreed upon by all entities using this methodology.

1.0 DEFINITION OF TERMS

1.1 DEFINITION OF SYSTEM ELEMENTS

Organization Element

The Organization Element of the system includes all those factors which have to do with the governmental, private, or voluntary administrative structure of the system, the relevant legal concepts and statutes, and the economics of the system.

Personnel Element

The Personnel Element of the EMS system involves the training, staffing, and deployment of personnel involved in any way with the EMS system. This includes not only doctors, nurses, and medical technicians, but also policemen, firemen, communications and data support personnel, as well as the general public.

Equipment Element

The Equipment Element includes medical, patient transport, communications and data processing equipment. In addition, the Equipment Element includes the equipping and classification of emergency medical facilities.

Operational Procedures Element

The Operational Procedures System Element is that which includes all methods of operation from the detection of a medical emergency through delivery of the patient to definitive care. It is that system element which encompasses the widest scope, and also that in which the widest divergence can be expected (with a possible exception of Organization) among the EMS Systems of different nations or states.

Records and Statistics Element

The Records and Statistics Element which, though not as directly and immediately involved in actual care of a victim of a medical emergency as some of the other elements, represents nevertheless a very important one which must be evaluated from several points of view. Not only must it be evaluated from the point of view of what records and statistics are collected and by what means and in what format, but also from the point of view of what is done with the records assembled and the information obtained.

1.2 DEFINITION OF EFFECTIVENESS PARAMETERS

System Availability (Impact Category Code SAV)

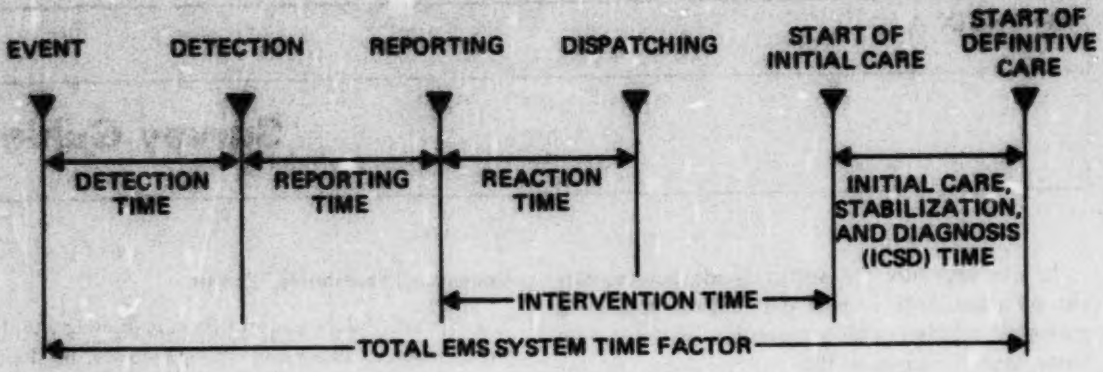
The extent of system availability is intended as a measure of the degree to which a system exists in the particular nation or state, the degree to which it is available to all sectors of the population in the geographical, social, and economical sense, and the degree to which it is supported on a broad basis by either government or private funding.

Extent of System Accessibility (Impact Category Code SACC)

The extent of system accessibility is a measure of how easily the system, once available, can be reached when needed.

Time Factors (Impact Category Code TF)

The time factors measure system effectiveness in terms of speed of medical assistance. A graphical



representation of the time factors (above), with a definition of each individual time factor, is given below:

1. **Detection Time** – Time elapsed between the occurrence of an event and its detection.
2. **Reporting Time** – Time elapsed between detection of an event and its reporting.
3. **Reaction Time** – Time elapsed between reporting of an event and the dispatching of whatever help appears appropriate based on the nature of the event as reported.
4. **Intervention Time** – Time elapsed between reporting of an event and the start of initial care. Intervention time includes such delays as those caused by traffic, which may affect the time required in getting an ambulance to the event scene.
5. **Initial Care, Stabilization, and Diagnosis (ICSD) Time** – Time elapsed between the start of initial care and the start of definitive care.
6. **Total EMS Time Factor** – The total time elapsed between an event and the start of definitive care for the victim. It is the sum of the detection time and the total time the victim spends within the EMS system.

Quality of Emergency Care (Impact Category QEC) and Quality of Emergency Equipment (Impact Category QEE)

The quality of emergency care together with the quality of emergency equipment is one of the most direct factors of measuring system quality and effectiveness. Since these factors are related to training and availability of personnel, degree of sophistication and availability of equipment, they are in turn rather directly related to system cost.

System Audit/Monitoring (Impact Category SAM)

System Audit/Monitoring is a parameter which, although not directly and immediately related to emergency medical care, does play an important role in the overall effectiveness of the system. It is an indication of how well the existing system is monitored, assessed by its own administrators, and how well information concerning the operation of the system is used to define, pinpoint, and eliminate system deficiencies and to improve system performance and effectiveness in general.

System Cost (Impact Category SC)

The System Cost parameter reflects all those factors impacting on the cost of acquiring, implementing, and operating the EMS system. Taken together with the other quantitative indices, it provides a first order measure of system cost-effectiveness.

1.3 GENERAL TERMS

Other terms used throughout the survey guide are defined below.

Emergency Medical Services (EMS) System

A system designed and equipped to respond to unforeseen and unscheduled events, threatening health and/or life and requiring medical attention. The EMS System includes the following elements:

1. Event Detection Systems (including methods and procedures) and Equipment.
2. Event Reporting Systems (including methods and procedures) and Equipment.
3. Dispatch and Control of aid teams and vehicles.
4. Initial Care, which may include some or all of the following:
   a. Physicians, Nurses and Emergency Medical Technicians
   b. Ambulance Personnel
   c. Police (on foot or motorized)

   d. Fire Rescue Vehicle
   e. Passers-by (professional or lay)
5. Transportation Equipment (Land, Sea, Air Ambulances)
6. Rescue Vehicles, Extrication Procedures, and Extrication Equipment
7. Aid Stations
8. Emergency Medical Facilities
9. Training of professional, paraprofessional and lay personnel (including general public)
10. Communications system supporting all phases of EMS
11. Support System (data collection, storage and processing systems and equipment)

Unscheduled Event

A sudden or unexpected situation wherein there is a real or possible threat to health or life (e.g., traffic or other accident, sudden illness, poisoning, premature or off-schedule childbirth).

Detection

The detection of an unscheduled event requiring emergency medical services via any of the following means:

1. Visual – by second party
2. Calling or signaling for help by first party through aural, visual, or electrical means other than those used in the reporting process
3. Passive automatic (electronic survey)
4. Active automatic (triggered radio beacon)
5. Exception (failure to arrive at preannounced estimated time – applicable for inaccessible regions)

Reporting

The process of notifying an EMS system element of the occurrence (and details, if possible) of a situation requiring medical assistance. The element notified is assumed to be one having the capability to, directly or via a second party, dispatch appropriate help.

Dispatching

The sending of appropriate emergency medical or paramedical personnel and appropriately equipped vehicles to the scene of an event. For the purpose of time factor definition, dispatching is defined to occur from a communications and/or command center representing the last link in a possible reporting chain (e.g., private phone → telephone operator → local police station → dispatching center).

Initial Care

That help administered by either professional medical, paraprofessional or especially trained personnel serving primarily to stabilize victim condition, lessen pain and discomfort, and prepare victim for transport.

Definitive Care

Professional medical care administered to the victim by professional medical help at a place where all personnel and facilities required to orient the care to the victim's particular condition are available. The start of definitive care marks the end of EMS.

Ambulances

Vehicles especially designed, equipped, and staffed for the transport of person(s) requiring emergency medical care from the site of an event to a place where adequate medical care can be administered.

This definition includes land, sea, and air (fixed and rotary wing) vehicles.

This definition excludes private automobiles, buses, or other makeshift means of transport which may at times have to be employed when more adequate transportation is not available.

Rescue Vehicles

Vehicles especially equipped for extrication of victims or remedying of dangerous physical situations (including fire, gas, water threats). Even though these vehicles carry initial medical care equipment, their primary purpose is physical rather than medical care beyond initial care and stabilization.

Emergency Medical Technician (EMT)

A person who has received training in emergency medical care. Under this definition, training implies an officially prescribed curriculum, subsequent certification, and refresher courses as required by applicable laws or guidelines.

EMT Category I – 81-hour training course
EMT Category II – 480-hour advanced course
EMT Category III – 2-year course (physician assistant)

Emergency Medical Care Station (Aid Station)

A facility staffed and equipped in such a manner that initial emergency medical care can be administered and patient stabilization steps can be taken.

- Aid stations are not necessarily colocated (associated) with hospitals.
- Aid stations need not necessarily have MDs on premises (only on call).

Medical Facility

That establishment where appropriate care can be administered.

2.0 IMPACT CATEGORIES – CODE

Graded Categories

Extent of System Availability	SAV
Extent of System Accessibility	SACC
Time Factors	TF
Quality of Emergency Care	QEC
Quality of Emergency Equipment	QEE
System Audit/Monitoring	SAM
System Cost	SC

Non-Graded Categories

Information (for establishment of need for EMS)	INFO

3.0 WEIGHTING CRITERIA

Weight 3 – Major Impact
Weight 2 – Substantial Impact
Weight 1 – Minor Impact
Weight 0 – No Impact

An additional weighting category is represented by a checkmark in the INFO impact category column. This indicates that the question is for informative purposes only. Answers to questions so weighted are not counted in the grading process.

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
SECTION I. BACKGROUND INFORMATION								
A. VITAL STATISTICS								
1. AREA (KM^2/MI^2)								x
2. POPULATION(1)								x
A. TOTAL								
B. LIVING IN URBAN AREAS (PLEASE SPECIFY YOUR DEFINITION OF URBAN AREA)(2)								
C. AGE GROUPS								
IN AGE GROUP 0 THROUGH 17								
IN AGE GROUP 18 THROUGH 24								
IN AGE GROUP 25 THROUGH 44								
IN AGE GROUP 45 THROUGH 60								
IN AGE GROUP ABOVE 60								

NOTE 1. AVERAGE OF LAST THREE YEARS (LAST YEAR KNOWN 19. . . .)

NOTE 2. USE SAME DEFINITION FOR URBAN AREA IN SECTIONS 1A THROUGH D

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
SECTION I. BACKGROUND INFORMATION								
B. ROAD AND MOTOR VEHICLE INFORMATION								
1. EXTRA URBAN ROAD INFORMATION								X
A. TOTAL MILES (OR KM) OF ALL CLASSES OF ROADS SUITABLE FOR MOTOR VEHICLE TRAFFIC								
B. HOW ARE YOUR HIGHWAYS CATEGORIZED?								
C. MILES (OR KM) OF ROADS IN EACH OF THE ABOVE CATEGORIES								
2. TOTAL NUMBER OF ROAD MOTOR VEHICLES (1) (2)								X
PASSENGER CARS								
MOTORCYCLES								
ALL OTHERS								

NOTE 1. AVERAGE OF LAST THREE YEARS (LAST YEAR KNOWN 19. . . .)

NOTE 2. DEFINITION OF ROAD MOTOR VEHICLES, ROAD TRAFFIC ACCIDENT, KILLED AND INJURED, ACCORDING TO "STATISTICS OF ROAD TRAFFIC ACCIDENTS IN EUROPE – 1969" UNITED NATIONS PUBL., NO E/F/R. 71. IIE. MIM. 4

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION I. BACKGROUND INFORMATION

B. ROAD AND MOTOR VEHICLE INFORMATION (Continued)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
3. WHAT KIND OF VEHICLE INSPECTION SYSTEM DO YOU HAVE?								x
4. WHAT ARE YOUR DRIVER CONTROL PROGRAMS (SEAT BELTS, DRIVER EDUCATION)?								x

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION I. BACKGROUND INFORMATION

C. TRAFFIC ASSOCIATED MEDICAL EMERGENCIES (3)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
1. TOTAL NUMBER OF ROAD TRAFFIC ACCIDENTS (1)								x
A. IN URBAN AREAS (2)								
B. IN OTHER AREAS								
2. HOW MANY TRAFFIC ACCIDENTS INVOLVE REQUESTS FOR EMERGENCY MEDICAL SERVICES?								x
A. IN URBAN AREAS (2)								
B. IN OTHER AREAS								
3. TOTAL NUMBER OF KILLED (1)								x
A. IN URBAN AREAS (2)								
B. IN OTHER AREAS								
4. TOTAL NUMBER OF INJURED (1)								x
A. IN URBAN AREAS (2)								
B. IN OTHER AREAS								

NOTE 1. AVERAGE OF LAST THREE YEARS (LAST YEAR KNOWN 19....)

NOTE 2. USE SAME DEFINITION FOR URBAN AREA IN SECTIONS IA THROUGH D

NOTE 3. DEFINITION OF ROAD MOTOR VEHICLES, ROAD TRAFFIC ACCIDENT, KILLED AND INJURED, ACCORDING TO "STATISTICS OF ROAD TRAFFIC ACCIDENTS IN EUROPE – 1969" UNITED NATIONS PUBL., NO E/F/R.71.11.MIM.4

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	EAM	SC	
SECTION I. BACKGROUND INFORMATION **C. TRAFFIC ASSOCIATED MEDICAL EMERGENCIES (CONTINUED)** 5. ARE THERE GEOGRAPHICAL AREAS WHICH REPRESENT A PARTICULARLY HIGH DEMAND FOR EMERGENCY MEDICAL ASSISTANCE? PLEASE GIVE ANY DETAIL AVAILABLE CONCERNING THESE AREAS AND THE POSSIBLE REASONS FOR THE HIGH INCIDENCE OF REQUESTS.								X

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION I. BACKGROUND INFORMATION

D. OTHER MEDICAL EMERGENCIES(1)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	EAM	SS	
1. HOW MANY CALLS FOR EMERGENCY MEDICAL ASSISTANCE ARE RECEIVED?(2)								X
2. HOW MANY OF THESE CALLS RESULTED IN DISPATCH OF AMBULANCES?(2)								X
3. HOW MANY OF THESE MEDICAL EMERGENCIES RESULTED IN USE OF HOSPITAL EMERGENCY DEPARTMENTS?(2)								X
4. WHAT PERCENTAGE OF CALLS FOR EMERGENCY MEDICAL HELP (NON-ROAD ACCIDENT CONNECTED) OCCURRED IN URBAN AREAS?(3)								X
5. ARE THERE GEOGRAPHICAL AREAS WHICH REPRESENT A PARTICULARLY HIGH DEMAND FOR EMERGENCY MEDICAL ASSISTANCE? PLEASE GIVE ANY DETAIL AVAILABLE CONCERNING THESE AREAS AND THE POSSIBLE REASONS FOR THE HIGH INCIDENCE OF REQUESTS.								X

NOTE 1. IF STATISTICS ARE NOT AVAILABLE, GIVE BEST POSSIBLE ESTIMATE AND FOLLOW FIGURES BY EST.

NOTE 2. AVERAGE OF LAST THREE YEARS (LAST YEAR KNOWN 19....)

NOTE 3. USE SAME DEFINITION FOR URBAN AREA IN SECTIONS IA THROUGH D

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION II. ORGANIZATION (1)								
A. GENERAL								
1. TO WHAT EXTENT DO POLICIES EXIST TO COVER A GENERAL EMS CONCEPT OR PLAN?	3							
2. TO WHAT EXTENT DO POLICIES EXIST TO COVER ORGANIZATIONAL STRUCTURE DOWN TO THE LOCAL LEVEL?	3							

NOTE 1. IF THE SUBJECTS OF QUESTIONS IIA 1–6 ARE IN AN ADVANCED PLANNING FUNDED STATE (I.E., WITHIN APPROXIMATELY 1 YEAR) THEY SHOULD BE COUNTED AS PRESENTLY EXISTING.

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

SECTION II. ORGANIZATION	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
A. GENERAL[1] (CONTINUED)								
3. TO WHAT EXTENT DO POLICIES EXIST TO COVER EMS PERSONNEL TRAINING?	1			3				
4. TO WHAT EXTENT DO POLICIES EXIST TO COVER PUBLIC INFORMATION/EDUCATION/TRAINING?	1		1	1				

NOTE 1. IF THE SUBJECTS OF QUESTIONS IIA 1-6 ARE IN AN ADVANCED PLANNING FUNDED STATE (I.E., WITHIN APPROXIMATELY 1 YEAR) THEY SHOULD BE COUNTED AS PRESENTLY EXISTING.

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________ CITY ____________ DATE ____________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
SECTION II. ORGANIZATION	SAV	SACC	TF	GEC	GEE	SAM	SC	
A. GENERAL[1] (CONTINUED)								
5. TO WHAT EXTENT DO POLICIES EXIST TO COVER STAFFING AND DEPLOYMENT OF EMS PERSONNEL?	2	3	2	3				
6. TO WHAT EXTENT DO POLICIES EXIST TO COVER TRANSPORT, COVERAGE, AND RESPONSE?		2	3	1				

NOTE 1. IF THE SUBJECTS OF QUESTIONS IIA 1–6 ARE IN AN ADVANCED PLANNING FUNDED STATE (I.E., WITHIN APPROXIMATELY 1 YEAR) THEY SHOULD BE COUNTED AS PRESENTLY EXISTING.

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION II. ORGANIZATION	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SS	
A. GENERAL (Continued)								
7. TO WHAT EXTENT DO POLICIES EXIST TO COVER VEHICULAR EQUIPMENT STANDARDS (AMBULANCES, RESCUE VEHICLES)?					3			
8. TO WHAT EXTENT DO POLICIES EXIST TO COVER MEDICAL EQUIPMENT FOR INITIAL CARE TEAMS, AMBULANCES, FIRST AID STATIONS?					3			

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
SECTION II. ORGANIZATION								
A. GENERAL (Continued)								
9. TO WHAT EXTENT DO POLICIES EXIST TO COVER HOSPITAL EMERGENCY DEPARTMENTS?	2			3				
10. TO WHAT EXTENT DO POLICIES EXIST TO COVER COMMUNICATIONS (INCLUDING DETECTION AND REPORTING)?		3	3	1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION II. ORGANIZATION	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	EACC	TP	SEC	REE	SAM	SC	
A. GENERAL (CONTINUED)								
11. TO WHAT EXTENT DO POLICIES EXIST TO COVER SUPPORT (DATA COLLECTION, STORAGE, AND PROCESSING)?						3		
12. TO WHAT EXTENT DO POLICIES AND/OR GUIDELINES EXIST TO COVER OPERATIONAL PROCEDURES?		3	3					

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION II. ORGANIZATION

A. GENERAL (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	EACC	TF	SEC	RES	MAN	SC	
13. TO WHAT EXTENT DO POLICIES EXIST TO COVER STANDARD PROVISIONS FOR TEMPORARY/ EMERGENCY CONVERSION OF COMMERCIAL VEHICLES (E.G., BUSSES INTO AMBULANCES)?		1						
14. DO THE STATE/REGIONAL GOVERNMENTS HAVE ANY POLICY ENFORCEMENT AUTHORITY AS OPPOSED TO THE GUIDELINES CONCEPT?								
A. REGARDING STATE/REGIONAL SERVICES	3							
B. REGARDING LOCAL SERVICES	3							
C. REGARDING VOLUNTEER GROUPS	3							
D. REGARDING PRIVATE ORGANIZATIONS	3							

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________________ CITY ____________________ DATE ____________

SECTION II. ORGANIZATION	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	EAM	SC	
A. GENERAL (Continued)								
15. TO WHAT EXTENT DO ORGANIZATIONS EXIST (STATEWIDE, REGIONALLY, LOCALLY) TO COVER THE FOLLOWING EMS ASPECTS (INCLUDE DEFINITION OF THE LEGAL STATUS OF EACH ORGANIZATION LISTED, E.G., GOVERNMENT AGENCY, VOLUNTARY, NON-PROFIT ORGANIZATION, PRIVATE, PROFIT-MAKING ORGANIZATION, OTHER).								
A. EMS PERSONNEL TRAINING	1			3				
B. PUBLIC INFORMATION/EDUCATION/TRAINING	1		1	1				
C. STAFFING AND DEPLOYMENT OF EMS PERSONNEL	2	3	2	3				
D. PROVISION OF TRANSPORTATION		2	3	1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION II. ORGANIZATION	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
A. GENERAL (CONTINUED)								
15. E. SETTING OF VEHICULAR EQUIPMENT STANDARDS (AMBULANCES, RESCUE VEHICLES)				2				
F. PROVISION OF MEDICAL EQUIPMENT FOR INITIAL CARE TEAMS, AMBULANCES, FIRST AID STATIONS.				2				
G. STAFFING AND OPERATING HOSPITAL EMERGENCY DEPARTMENTS				2				
H. PROVISION OF COMMUNICATIONS (INCLUDING DETECTION AND REPORTING)		2	2	1				
I. PROVISION OF SUPPORT (DATA COLLECTION, STORAGE, AND PROCESSING)						2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION II. ORGANIZATION	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	OEC	USE	SAM	SC	
A. GENERAL (CONTINUED)								
16. TO WHAT EXTENT DO THESE ORGANIZATIONS SUPPORT AND PARTICIPATE IN THE EMS PLAN?	3							
17. HOW WELL COULD A NATIONAL EMS ORGANIZATION FUNCTION AS A CONGLOMERATE OF EXISTING NATIONAL, REGIONAL, LOCAL, AND PRIVATE ORGANIZATIONS OPERATING UNDER AN ENFORCED COMMON SET OF STANDARDS, PROCEDURES, ETC., AND SUBJECT TO PERIODICAL EVALUATION?	3							

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
SECTION II. ORGANIZATION	SAV	SACC	TF	OEC	OEE	SAM	SC	
A. GENERAL (CONTINUED)								
18. WHAT ARE THE MAIN OBSTACLES OR CONSTRAINTS (IF ANY) TO THE IMPLEMENTATION OF THE POLICIES?	3							

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION II. ORGANIZATION

A. GENERAL (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
19. WHAT ARE EXISTING STATUTES WITH REGARD TO	2	2						
A. JURISDICTIONAL BOUNDARIES?								
B. LOCAL ADMINISTRATIVE JURISDICTION?								
20. ARE THERE STATUTES WITH REGARD TO AREAS OF RESPONSIBILITIES?	2	2						

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	QEC	QEE	EAM	SC	
SECTION II. ORGANIZATION								
B. FINANCIAL								
1. WHAT IS THE FINANCING MECHANISM FOR IMPLEMENTING AND SUPPORTING[(1)]								
A. TRANSPORTATION		1	1	1			2	
B. COMMUNICATIONS (INCLUDING DETECTION AND REPORTING)		2	2				2	
C. TRAINING				2			2	
D. MEDICAL EQUIPMENT FOR VEHICLES AND FIRST AID				2	2		2	
E. EMERGENCY ROOM				2	2		2	

NOTE 1. SUBSIDIES, TAXATION, PRIVATE INSURANCE COMPANIES, THE USER OF THE SYSTEM, ETC.

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
SECTION II. ORGANIZATION	SAV	SACC	TP	GEC	GEE	SAM	SC	
C. LEGAL								
1. WHAT ARE THE LEGAL ASPECTS THAT INFLUENCE EFFECTIVE IMPLEMENTATION OF SPECIFIC ASPECTS OF AN EMS SYSTEM (E.G., TREATMENT ON SITE, TREATMENT DURING TRANSPORT)?	2			1				
2. HAVE LEGAL ACTIONS AGAINST THE EXISTING SYSTEM OR ITS COMPONENT ELEMENTS (E.G., DOCTORS, HOSPITALS) FORMED ANY SIGNIFICANT PART OF THE PROBLEMS INVOLVED IN OPERATING THE SYSTEM OR NOTICEABLY AFFECTED ITS FUNCTIONING?	2			1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________ CITY ____________ DATE ____________

SECTION II. ORGANIZATION

D. COMMENTS AND NOTES

WEIGHT PER IMPACT CATEGORY							INFO ONLY
SAV	SACC	TP	GKC	GEE	SAM	SC	

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION III. PERSONNEL								
A. TRAINING								
1. DESCRIBE NATURE OF EMERGENCY CARE TRAINING AND CURRICULUM IN TERMS OF SUBJECTS COVERED, HOURS PER SUBJECT, AND TECHNIQUES EMPLOYED IN TRAINING IN EACH SUBJECT AREA FOR:				2				
A. MEDICAL DOCTORS (MDS)								
B. REGISTERED NURSES (RNS)								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

SECTION III. PERSONNEL

A. TRAINING (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
2. WHAT IS THE NATURE OF EMERGENCY CARE TRAINING FOR EMS PERSONNEL OTHER THAN MDS AND RNS (AMBULANCE ATTENDANTS, EMF PERSONNEL, PARAMEDICS)?				3				
3. IS TRAINING IN EXTRICATION TECHNIQUES AND PROCEDURES GENERALLY GIVEN TO EMT PERSONNEL? TO OTHERS?				2				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION III. PERSONNEL **A. TRAINING (CONTINUED)** 4. WHAT IS THE NATURE OF EMERGENCY CARE TRAINING FOR: A. POLICE, FIREMEN				2				
B. COMMUNICATIONS PERSONNEL			1					
C. DATA TECHNICIANS AND ANALYSTS						1		
D. GENERAL PUBLIC			1	1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
SECTION III. PERSONNEL	EAV	EACC	TP	GEC	GEE	EAM	EC	
A. TRAINING (CONTINUED)								
3. WHAT IS THE NUMBER, LOCATION, AND STUDENT LOAD OF THE EMERGENCY CARE TRAINING CENTERS FOR:								
A. MDS AND RNS				2				
B. AMBULANCE ATTENDANTS, EMF PERSONNEL, PARAMEDICS				3				
C. POLICE, FIREMEN				3				
D. COMMUNICATIONS PERSONNEL			2					
E. DATA TECHNICIANS AND ANALYSTS						1		
F. GENERAL PUBLIC			1	1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
SECTION III. PERSONNEL								
A. TRAINING (CONTINUED)								
6. DO DIFFERENT TRAINING REQUIREMENTS FOR THE VARIOUS GROUPS EXIST AT STATE, LOCAL, AND VOLUNTEER ORGANIZATION LEVELS?				1				
7. IS TRAINING STANDARDIZED IN TERMS OF COURSE CONTENT, HOURS PER SUBJECT, AND TECHNIQUES EMPLOYED IN TRAINING AND CERTIFICATION IN EACH SUBJECT AREA?				1				
8. WHAT AGENCY IS RESPONSIBLE FOR CERTIFICATION? A. GOVERNMENT AGENCY B. MEDICAL ORGANIZATION C. OTHERS				1				
9. WHAT WERE SOME OF THE SPECIFIC CRITERIA CONSIDERED IN ESTABLISHING THE ABOVE COURSES? WERE ANY OF THESE PARTICULARLY CRITICAL IN COURSE PLANNING?				1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
SECTION III. PERSONNEL	SAV	SACC	TF	SEC	[illegible]	[illegible]	SC	
A. TRAINING (Continued)								
10. ARE THERE REQUIREMENTS FOR REFRESHER COURSE ATTENDANCE IN THE CERTIFICATION PROCEDURES?				3				
11. IS THERE A PROGRAM FOR EVALUATING THE TRAINING COURSES WITH A VIEW TOWARD COURSE IMPROVEMENT? IF SO, WHAT IS PROGRAM? WHAT IS EVALUATION CRITERIA?				2		2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION III. PERSONNEL

A. TRAINING (Continued)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	REC	SEE	SAM	SC	
12. IS GENERAL PUBLIC INFORMATION, EDUCATION, AND TRAINING DIRECTED MORE TO THE AREAS OF FIRST AID, OR MORE TO PROPER AND RAPID ACCIDENT REPORTING PROCEDURES? IN EITHER CASE, HAS YOUR APPROACH SHOWN NOTICEABLE IMPROVEMENT IN ON-THE-SPOT FIRST AID OR RAPIDITY OF REPORTING RESPECTIVELY?			1	1				
13. WHAT IS THE ROLE OF POLICEMEN (AND FIREMEN, WHERE APPLICABLE) IN PROVIDING EMERGENCY MEDICAL SERVICES?				2				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
SECTION III. PERSONNEL								
A. TRAINING (CONTINUED)								
14. DO THEY FREQUENTLY APPLY THE TRAINING THEY RECEIVE? IS THIS APPLICATION GENERALLY CONSIDERED TO BE A POSITIVE FACTOR IN EMERGENCY MEDICAL CARE?				2				
15. HAS AID TO THE INJURED BY OTHER THAN EMS PERSONNEL BEEN OF VALUE OR DETRIMENT ON THE WHOLE? WHAT EVIDENCE IS THERE TO SUPPORT THIS? IF OF VALUE, HAVE THE EFFORTS OF ANY PARTICULAR SEGMENT OF THE POPULATION BEEN OF SPECIFIC NOTE?				2		1		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
SECTION III. PERSONNEL								
A. TRAINING (CONTINUED)								
16. WHAT ARE THE RESULTS OF ANY STUDY (IF MADE) OF THE EFFECTS OF TRAINING EFFORTS IN REDUCING INTERVENTION TIME AND IMPROVING SURVIVAL RATE?			1	1		2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION III. PERSONNEL								
B. STAFFING AND DEPLOYMENT								
1. WHAT IS THE STAFFING STRUCTURE (INCLUDING MINIMUM STAFFING REQUIREMENTS, IF ANY) IN TERMS OF PROFESSIONAL BACKGROUND AND NUMBER OF PERSONNEL FOR:								
A. AMBULANCES				2				
B. EMF (EMERGENCY MEDICAL FACILITY)				2				
C. COMMUNICATION CENTER		2	2	1				
D. SUPPORT PERSONNEL (DATA TECHNICIANS, SYSTEM ANALYSTS, ETC.)						1		
2. TO WHAT EXTENT IS THE EFFECTIVE OPERATION OF THE EMS SYSTEM BEING HAMPERED BY SHORTAGES OF:								
A. MDS		2		3				
B. EMTS/PARAMEDICS		1		2				
C. POLICE/FIREMEN/RESCUE TEAMS		2	1	1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
SECTION III. PERSONNEL								
B. STAFFING AND DEPLOYMENT (CONTINUED)								
2. D. COMMUNICATIONS PERSONNEL			2	1				
E. DATA TECHNICIANS, STATISTICIANS						2		
3. ARE THESE SHORTAGES GEOGRAPHICALLY DETERMINED (E.G., IN URBAN AREAS, IN RURAL AREAS)?		3		2				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION III. PERSONNEL C. COMMENTS AND NOTES								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	DEC	SEE	DAM	SC	
SECTION IV. EQUIPMENT								
A. AMBULANCES AND RESCUE VEHICLES								
1. WHAT CATEGORIES OF RESCUE VEHICLES ARE EMPLOYED?					2			
A. LAND								
B. AIR								
C. SEA								
D. OTHERS								
2. WHAT ARE THE DESIGN CRITERIA IN EACH CATEGORY?					3			
A. LAND								
B. AIR								
C. SEA								
D. OTHERS								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION IV. EQUIPMENT **A. AMBULANCES AND RESCUE VEHICLES (CONTINUED)**								
3. WHAT ARE THE CRITERIA FOR EQUIPPING EMS GROUND VEHICLES? A. POLICE B. FIRE BRIGADE C. AMBULANCE SERVICE – GROUND					3			
4. ARE THERE SPECIALLY EQUIPPED GROUND VEHICLES IN THE ABOVE CATEGORIES (E.G., MOBILE CORONARY CARE UNITS, POLICE FIRE RESCUE UNITS...) AND WHAT SPECIAL EQUIPMENT DO THEY CARRY?					2			

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION IV. EQUIPMENT	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
A. AMBULANCES AND RESCUE VEHICLES (CONTINUED)								
5. WHERE OTHER RESCUE VEHICLES (E.G., HELICOPTERS) ARE EMPLOYED, WHAT EQUIPMENT DO THEY CARRY?					2			
6. WHAT EMERGENCY WARNING AND SAFETY EQUIPMENT (LIGHTS, SIRENS, FIRE EQUIPMENT) DO VEHICLES CARRY?			1					
7. WHAT ARE THE RESULTS OF ANY STUDY (IF MADE) OF THE EFFECTS OF THE FOLLOWING FACTORS ON REDUCTION IN INTERVENTION TIME AND IMPROVEMENT OF SURVIVAL RATE?								
A. IMPROVEMENTS IN MEDICAL EQUIPMENT CARRIED ON AMBULANCES?				1		2		
B. USE OF SPECIAL MOBILE EMERGENCY UNITS (CORONARY FACILITIES, ETC.)?				1		2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________ CITY ____________ DATE ____________

SECTION IV. EQUIPMENT	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
B. EMERGENCY MEDICAL FACILITIES (EMFS)								
1. WHAT ARE THE CLASSIFICATIONS OF EMFS AND THE CRITERIA FOR EACH? HOW ARE THEY USED?					2			
2. WHAT ARE THE CRITERIA FOR STAFFING AND EQUIPPING EMFS IN EACH CLASS?				2	2			
3. WHAT ARE THE TECHNICAL AND ECONOMIC POSSIBILITIES OF COMMON STANDARDS (STATE ADVANTAGES AS WELL AS ACTUAL/POTENTIAL PROBLEMS)							1	
4. TO WHAT EXTENT ARE COMMON STANDARDS								
A. PROPOSED?							1	
B. ENFORCED?							2	

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
SECTION IV. EQUIPMENT	SAV	SACC	TP	GEC	GEE	SAM	SC	
C. COMMUNICATIONS (CONTINUED)								
2. HOW ARE THE COMMUNICATION CONTROL CENTERS CONFIGURED INTO FIXED AND MOBILE NETWORKS:			2					
A. RADIO VOICE AND DATA CHANNELS								
B. LANDLINE VOICE AND DATA CHANNELS								
3. ARE PRIVATE (NON-COMMON-CARRIER) LANDLINE NETWORKS AVAILABLE?			1				2	
4. WHAT ARE TECHNICAL AND ECONOMIC POSSIBILITIES OF COMMON STANDARDS (STATE ADVANTAGES AS WELL AS ACTUAL/POTENTIAL PROBLEMS)?							1	

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

SECTION IV. EQUIPMENT

C. COMMUNICATIONS (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
5. TO WHAT EXTENT ARE COMMON STANDARDS								
A. PROPOSED?							1	
B. USED?							2	
6. ARE COMMUNICATIONS FACILITIES MADE AVAILABLE TO EMS BY THE OPERATING COMMUNICATIONS AGENCIES			1					
A. EASILY?								
B. WITH MODERATE DIFFICULTY?								
C. WITH GREAT DIFFICULTY?								
7. ARE ANY COMMUNICATIONS FACILITIES MADE AVAILABLE TO EMS FREE OF CHARGE BY THE OPERATING COMMUNICATION AGENCIES?							2	

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
SECTION IV. EQUIPMENT								
D. SUPPORT								
1. WHAT ARE CRITERIA FOR DATA PROCESSING AND STORAGE (FILES) EQUIPMENT?						1		
A. MANUAL								
B. ELECTROMECHANICAL UNIT RECORD SYSTEM								
C. ELECTRONIC DATA PROCESSING								
2. ARE THERE ANY REQUIREMENTS AND/OR CRITERIA FOR REMOTE DATA ENTRY FACILITIES AT						2		
A. FIRST AID FACILITIES?								
B. HOSPITAL EMERGENCY DEPARTMENTS?								
C. OTHER LOCATIONS (SPECIFY)?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
SECTION IV. EQUIPMENT E. COMMENTS AND NOTES								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION IV. EQUIPMENT	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
C. COMMUNICATIONS								
1. WHAT, IF ANY, ARE THE MINIMUM COMMUNICATION REQUIREMENTS IN TERMS OF NUMBER OF VOICE CHANNELS, DATA CHANNELS, EMERGENCY ALERT SIGNALS FOR:		1	2					
A. POLICE PATROLS								
B. FIRE AND OTHER RESCUE VEHICLES								
C. TRANSPORT VEHICLES – GROUND, AIR								
D. EMFS								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

SECTION V. OPERATIONAL PROCEDURES

A. DETECTION

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
1. WHAT PROCEDURES/EQUIPMENT/SYSTEMS (INCLUDING SURVEILLANCE) EXIST OR ARE UNDER CONSIDERATION TO		1	3					
A. FACILITATE (SPEED UP) DETECTION OF ACCIDENTS								
B. REDUCE THE INCIDENCE OF UNDETECTED ACCIDENTS OR ACCIDENTS DETECTED LONG AFTER THE EVENT OCCURRED (E.G., VEHICLE OVER EMBANKMENTS, INTO BUSHES, ETC.)								
2. ARE STANDARDIZED SIGNALS USED (DEPLOYED EITHER BY ACCIDENT VEHICLE OCCUPANTS OR BY PASSERSBY TO INDICATE THAT ACCIDENT HAS TAKEN PLACE) (FLARES, ETC.)? ARE THESE SIGNALS REQUIRED TO BE CARRIED BY ALL VEHICLES?		1	2					
3. WHAT PROCEDURES ARE IN USE TO FACILITATE DETECTION OF MEDICAL EMERGENCIES OTHER THAN ACCIDENTS (E.G., ROUTINE PERSONAL PHONE CHECKING OF OLD/ILL PERSONS LIVING ALONE, ETC.)		1	3					

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION V. OPERATIONAL PROCEDURES

A. DETECTION (Continued)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
4. IS THERE ANY INFORMATION AVAILABLE PERTAINING TO IMPACT OF DETECTION (AND REPORTING) SYSTEMS ON REDUCING DETECTION AND REPORTING TIMES? IF SO, WHAT HAS BEEN THE IMPACT?			1			2		
5. ARE THERE ANY AREAS WHERE DETECTION OF ACCIDENTS AND/OR REPORTING HAS BEEN PARTICULARLY WEAK? IF SO, DESCRIBE THE NATURE OF THESE AREAS.								x
6. WHERE MEANS FOR AUTOMATED SURVEILLANCE OF THESE AREAS HAVE BEEN TRIED, WHAT WERE THE RESULTS FOR EACH SYSTEM TRIED?			2			1		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	EACC	TF	SEC	[illegible]	[illegible]	SC	
SECTION V. OPERATIONAL PROCEDURES **B. REPORTING** 1. WHAT ARE THE STANDARD PROCEDURES IN USE TO REPORT AN EVENT?[1] (E.G., CALL OPERATOR, EMERGENCY NUMBER, POLICE CALL BOXES). (STATE SPECIFICALLY IF THESE PROCEDURES INCLUDE A UNIFIED CALL SYSTEM IN USE EITHER LOCALLY, REGIONALLY, OR STATEWIDE.)		3	3					
2. WHAT EMERGENCIES DO THE UNIFIED CALL SYSTEM COVER? A. EMS B. FIRE C. POLICE D. OTHERS		3	3					
3. WHAT PROVISIONS ARE MADE TO PERMIT FREE CALLS FROM PUBLIC PHONES TO EMERGENCY NUMBERS?		2	2					

NOTE 1. THE TERM "EVENT" IS USED TO DESIGNATE ANY SITUATION REQUIRING EMERGENCY MEDICAL HELP. IT INCLUDES INJURIES DUE TO ROAD ACCIDENTS.

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
B. REPORTING (CONTINUED)								
4. WHAT HIGHWAY FACILITIES ARE THERE TO FACILITATE REPORTING OF AN EMERGENCY:		2	2					
A. IN EXISTENCE								
B. PLANNED								
5. WHAT SYSTEMS EXIST FOR AUTOMATIC REPORTING OF AN EMERGENCY? (E.G., RADIO SIGNAL EMITTED BY AFFECTED CAR)		2	2					
6. ARE THERE ANY PLANS OR STUDY PROGRAMS LEADING TOWARDS DEVELOPMENT/ IMPLEMENTATION OF SUCH SYSTEMS?		1	1					
7. IS THERE ANY PROGRAM OR PLANS FOR A PROGRAM TO EDUCATE THE PUBLIC IN THE IMPORTANCE OF AND PROPER PROCEDURES IN REPORTING EVENTS TO AUTHORITIES? IF SO, WHAT IS THE NATURE OF THE PROGRAM?		1	1					
8. IS ANY ATTEMPT MADE AT THE REPORTING POINT TO DETERMINE THE NATURE AND GRAVITY OF THE EMERGENCY?			2	1				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
B. REPORTING (CONTINUED)								
9. IS THAT INFORMATION USED IN THE DECISION TO SEND ANY RESCUE VEHICLE TO THE SCENE? IF SO, IS THAT DECISION MADE BY THE COMMUNICATIONS OPERATOR?			2	1				
10. IS THAT INFORMATION USED IN THE SELECTION OF THE TYPE OF RESCUE VEHICLE TO BE DISPATCHED OR TO ALERT SPECIALIZED EMFS?			2	1				
11. IN THOSE CASES WHERE A GENERAL/PUBLIC INFORMATION/EDUCATION/TRAINING PROGRAM CONCERNING EMERGENCY EVENT REPORTING PROCEDURES HAS BEEN IN EFFECT, HAS THERE BEEN ANY NOTICEABLE DROP IN INTERVENTION TIME?			2			2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
SECTION V. OPERATIONAL PROCEDURES	SAV	SACC	TF	GEC	GEE	SAM	SC	
C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES								
1. AT WHAT LOCATIONS ARE LAND AMBULANCES AND OTHER LAND VEHICLES REGULARLY STATIONED?			2					
2. WHAT ARE THE CRITERIA (IF ANY) FOR DEPLOYMENT OF LAND AMBULANCES AND OTHER LAND RESCUE VEHICLES?			2					
3. WHAT ARE THE CRITERIA FOR DEPLOYMENT OF SPECIALLY EQUIPPED EMS VEHICLES (E.G., MOBILE CORONARY CARE UNITS, ETC.)?			2					

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
SECTION V. OPERATIONAL PROCEDURES								
C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES (CONTINUED)								
4. AT WHAT LOCATIONS ARE AIR VEHICLES UTILIZED BY THE EMS SYSTEM (IF USED) REGULARLY STATIONED?			2					
5. WHAT ARE THE CRITERIA FOR THEIR DEPLOYMENT?			2					
6. WHAT IS THE CURRENT NUMERICAL DEPLOYMENT OF LAND AMBULANCES AND OTHER LAND RESCUE VEHICLES (GIVE INFORMATION ON A LOCAL, REGIONAL, AND STATEWIDE BASIS IF AVAILABLE IN THAT FORM)?		2	2					
7. WHAT IS THE CURRENT NUMERICAL DEPLOYMENT OF AIR VEHICLES (GIVE INFORMATION ON A LOCAL, REGIONAL, AND STATEWIDE BASIS IF AVAILABLE IN THAT FORM)?		2	2					

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION V. OPERATIONAL PROCEDURES

C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	GEC	GEE	SAM	SC	
8. DESCRIBE ANY EXISTING PROGRAM (IN PARTICULAR THE DATA OR CRITERIA USED IN THE EVALUATION) FOR:								
A. CONTINUING EVALUATION OF AMBULANCE DEPLOYMENT		1	1			2		
B. SERVICES PROVIDED?				1		2		
9. WHAT SCHEME (IF ANY) IS THERE FOR OPTIMUM ROUTING OF EMS VEHICLES TO AND FROM THE SCENE?			2					
10. IS THERE A PROGRAM FOR EVALUATION OF THIS ROUTING SCHEME? IF SO, WHAT DATA AND CRITERIA ARE EMPLOYED IN THIS EVALUATION?			1			2		

EMERGENCY MEDICAL SERVICES SURVEY

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	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
SECTION V. OPERATIONAL PROCEDURES								
C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES (CONTINUED)								
11. IS THERE ANY PLAN FOR GEOGRAPHICAL DEPLOYMENT OF EMFS? IF SO, WHAT DATA AND EXTENT OF IMPLEMENTATION?		2	3					
12. IS THERE A SPECIFIC GEOGRAPHIC AREA OF RESPONSE ASSIGNED TO EMFS?		3	3					
13. IS THERE ANY PLAN FOR GEOGRAPHICAL DEPLOYMENT OF AID STATIONS? WHAT IS ITS NATURE AND EXTENT OF IMPLEMENTATION?		3	3					
14. ARE THERE DESIGNATED HOSPITALS FOR TREATMENT OF SEVERE ACCIDENT CASES?				3				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	DAM	SC	
C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES (CONTINUED)								
15. IS THERE A SCHEME (E.G., "BATTLE PLAN", OPERATIONAL SCENARIO) FOR ASSIGNMENT OF VEHICLES TO PARTICULAR EMERGENCY EVENTS AND ASSIGNMENT OF PATIENTS TO THE MOST APPROPRIATE EMF? IF SO, WHAT IS THE NATURE OF SCHEME? DOES IT INCLUDE ANY FORM OF LOCAL, REGIONAL OR STATEWIDE DATA BANK OF AVAILABLE SERVICES/BEDS/SPECIALISTS USED TO FACILITATE DELIVERY OF PATIENT (BY SPECIALLY EQUIPPED AMBULANCE, IF NECESSARY) TO A SPECIFICALLY SUITED HOSPITAL RATHER THAN TO NEAREST HOSPITAL?			3	3				
16. IS THERE A PROGRAM FOR EVALUATION OF THIS ASSIGNMENT SCHEME? IF SO, WHAT DATA AND CRITERIA ARE EMPLOYED IN THIS EVALUATION?						3		

EMERGENCY MEDICAL SERVICES SURVEY

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SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	VP	SEC	SEE	EAS	SS	
C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES (CONTINUED)								
17. IF NOT PRESENTLY IN EXISTENCE, HAS ANY CONSIDERATION BEEN GIVEN TO SUCH A SYSTEM? IF SO, WHAT WERE THE NATURE AND RESULTS OF THIS CONSIDERATION?			1	1				
18. ARE THERE PROCEDURES FOR DEPLOYMENT OF PHYSICIANS TO THE SCENE OF AN EMERGENCY EVENT?				2				
19. WHAT PROCEDURES EXIST FOR DISPOSAL OF IDENTIFIED AND UNIDENTIFIED CARGO WHICH MAY BE DANGEROUS TO HEALTH AND LIFE?								X
20. TO WHAT EXTENT HAVE RADIO VOICE/DATA COMMUNICATION LINKS BEEN EFFECTIVE IN IMPROVING ON-SITE EXTRICATION, INITIAL CARE, AND STABILIZATION? WHAT DATA IS AVAILABLE TO SUPPORT THIS?				2		1		

EMERGENCY MEDICAL SERVICES SURVEY

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	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	VP	SEC	SEE	SAM	SC	
SECTION V. OPERATIONAL PROCEDURES								
C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES (CONTINUED)								
21. TO WHAT EXTENT WOULD DIRECT COMMUNICATION (VOICE OR DATA) BETWEEN POLICE AND EMFS BE OF VALUE IN PROVIDING IMPROVED VICTIM ASSISTANCE WHILE WAITING FOR AMBULANCE ARRIVAL?								X
22. WHAT ARE THE RESULTS OF ANY STUDY (IF MADE) OF THE EFFECTS OF THE FOLLOWING FACTORS ON REDUCTION IN REACTION AND INTERVENTION TIME AND IN INCREASING SURVIVAL RATE:								
A. INCREASING AMBULANCE AVAILABILITY?			8			8		
B. IMPROVEMENTS IN SUPPORT FACILITIES SUCH AS COMMUNICATIONS, INFORMATION NETWORKS CONCERNING HOSPITAL AVAILABILITY, AMBULANCE DEPLOYMENT, ETC...?		8	8			8		
C. USE OF TELEMETERED MEDICAL DATA?				8		8		

EMERGENCY MEDICAL SERVICES SURVEY

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SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	YP	SEC	[illegible]	[illegible]	SC	
C. DEPLOYMENT, DISPATCHING AND CONTROL OF EMERGENCY VEHICLES (CONTINUED)								
23. WHAT SYSTEMS ARE IN EFFECT FOR MARKINGS INDICATING LOCATION OF A. NEAREST AID STATION B. NEAREST EMF/HOSPITAL								
24. TO WHAT EXTENT ARE HOSPITALS REQUIRED OR ENCOURAGED TO DEVELOP AVIATION LANDING CAPABILITY?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SES	[illegible]	DC	
D. TRIAGE AND TREATMENT AT SITE								
1. IS THERE A GENERAL POLICY REGARDING TYPE AND SCOPE OF TREATMENT AT SITE OF EMERGENCY EVENT (E.G., EMPHASIS ON STABILIZATION, PRELIMINARY TREATMENT, ETC.)?				3				
2. ARE ALL RESPONDING UNITS CAPABLE OF INITIAL CARE AND TRANSPORT?			1	2				
3. TO WHAT EXTENT ARE RADIO VOICE LINKS BETWEEN RESPONDING VEHICLES AND MEDICAL FACILITY USED?				3				
4. TO WHAT EXTENT ARE RADIO DATA LINKS BETWEEN RESPONDING VEHICLES (POLICE CAR, FIRE SQUAD) AND HOSPITAL USED?				3				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________ CITY ____________ DATE ____________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	EXEC	TP	SEC	SEE	EAM	ED	
D. TRIAGE AND TREATMENT AT SITE (CONTINUED)								
5. IS THERE ANY INFORMATION ON THE EFFECT OF TRIAGE AT SITE (WHERE IMPLEMENTED) ON REDUCTION IN FATALITY RATES?				1		1		
6. IS THE SHORTAGE OF TRAINED PERSONNEL OR ARE LEGAL IMPLICATIONS THE CONTROLLING OBSTACLE TO PATIENT TREATMENT AT SITE AND DURING TRANSPORT? WHAT REVISION OF EXISTING CONDITIONS WOULD BE NECESSARY TO OVERCOME THIS OBSTACLE? ARE ANY PROGRAMS IN EFFECT OR IN PLANNING TO DO THIS?	1			2				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ________________ CITY ________________ DATE ________________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	USE	MAN	SC	
E. TREATMENT ENROUTE TO EMF								
1. IS THERE A GENERAL POLICY REGARDING TYPE AND SCOPE OF TREATMENT ENROUTE TO EMF (E.G., EMPHASIS ON STABILIZATION, PRELIMINARY TREATMENT, ETC.)?				3				
2. TO WHAT EXTENT ARE RADIO VOICE LINKS BETWEEN AMBULANCE PERSONNEL AND MEDICAL FACILITY USED?				3				
3. TO WHAT EXTENT ARE RADIO DATA LINKS BETWEEN AMBULANCE VEHICLE AND HOSPITAL USED?				3				

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION V. OPERATIONAL PROCEDURES

E. TREATMENT ENROUTE TO EMF (Continued)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACH	TP	SEC	SEE	SAN	SC	
4. IS THERE ANY INFORMATION ON THE EFFECT OF TREATMENT ENROUTE (WHERE IMPLEMENTED) ON REDUCTION IN FATALITY RATES?				1		1		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	VP	SEC	SEE	SAM	EC	
F. TRIAGE AND TREATMENT IN EMF								
1. WHAT SCREENING PROCEDURES TAKE PLACE UPON PATIENT'S ARRIVAL IN EMF?			2					
A. BY PARAMEDIC								
B. BY RN								
C. BY MD								
2. WHAT PROCEDURES ARE EMPLOYED TO REROUTE LESS SERIOUSLY ILL OR INJURED PATIENTS AWAY FROM EMS FACILITIES TO AVOID OVERLOAD?			8					
A. ALL PATIENTS SEEN BY MD IN EMF								
B. REFERRAL TO OTHER CLINICS								
C. REFERRAL TO FAMILY PHYSICIAN								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	EAV	EACC	TF	SEC	SEE	EAM	SC	
F. TRIAGE AND TREATMENT IN EMF (CONTINUED)								
3. WHAT ARE BASES, IF ANY, FOR A DECISION TO TRANSFER SEVERELY INJURED TO "DESIGNATED" HOSPITALS?			2					
4. WHAT CRITERIA ARE ESTABLISHED FOR THE PROCESSING OF PATIENTS FOR TREATMENT?			2					
5. WHAT PROCEDURES ARE EMPLOYED FOR PROCESSING OF PATIENTS TO OTHER SERVICES (E.G., SURGERY, MEDICINE, ETC.)?			2					
6. WHO MAINTAINS AND PROCESSES THE PATIENT'S RECORD? (E.G., MD, RN, TECHNICIAN)						2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ________________ CITY ________________ DATE ________________

SECTION V. OPERATIONAL PROCEDURES	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
F. TRIAGE AND TREATMENT IN EMF (CONTINUED)								
7. HOW EXTENSIVELY DOES THE RECORD COVER THE PATIENT S CONDITION AND HISTORY OF EVENT?						2		
8. WHAT IS DONE WITH THAT RECORD?						2		
9. IS THERE ANY INFORMATION ON THE EFFECT OF TRIAGE AT EMFS (WHERE IMPLEMENTED) ON REDUCTION IN FATALITY RATES?				2		1		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

SECTION V. OPERATIONAL PROCEDURES

G. COMMENTS AND NOTES

WEIGHT PER IMPACT CATEGORY							INFO ONLY
SAV	SACC	TF	SEC	SEE	SAM	SS	

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION VI. RECORDS AND STATISTICS								
A. COLLECTION AND FORMATTING								
1. HOW AND BY WHOM ARE STATISTICS COMPILED CONCERNING EVENTS REQUIRING EMERGENCY MEDICAL ASSISTANCE:						2		
A. EVENTS ARISING OUT OF ROAD ACCIDENTS?								
B. OTHERS?								
2. REGARDING EVENTS ARISING OUT OF ROAD ACCIDENTS, ARE THERE UNIFORM CRITERIA FOR THE FOLLOWING EVENTS? WHAT ARE THEY FOR EACH TYPE OF EVENT?						2		
A. CALLS FOR EMERGENCY MEDICAL HELP								
B. REPORTABLE AND RECORDED ACCIDENTS								
C. REPORTABLE AND RECORDED INJURIES								
D. REPORTABLE AND RECORDED FATALITIES								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________ CITY ____________ DATE ____________

SECTION VI. RECORDS AND STATISTICS

A. COLLECTION AND FORMATTING (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
3. REGARDING EVENTS ARISING FROM CAUSES OTHER THAN ROAD ACCIDENTS, ARE THERE UNIFORM CRITERIA FOR THE FOLLOWING EVENTS? WHAT ARE THEY FOR EACH TYPE OF EVENT?						2		
A. CALLS FOR EMERGENCY MEDICAL HELP								
B. INJURIES/ILLNESSES								
C. FATALITIES								
4. CONCERNING STATISTICS GATHERED ON ROAD ACCIDENTS LEADING TO INJURIES AND/OR FATALITIES:						2		
A. IS TIME AND LOCATION OF ACCIDENT RECORDED?								
B. IS ROAD CATEGORIZATION INCLUDED IN REPORT?								
C. IS VEHICLE TYPE(S) INCLUDED IN REPORT?								
D. WHAT ARE THE SOURCES OF THIS DATA?								
E. IN WHAT FORM IS ACCIDENT DATA COLLECTED AND RECORDED BY THE VARIOUS SOURCES?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION VI. RECORDS AND STATISTICS	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
A. COLLECTION AND FORMATTING (CONTINUED)								
5. CONCERNING STATISTICS GATHERED ON INJURIES ARISING OUT OF ROAD ACCIDENTS						8		
A. IS THERE A CATEGORIZATION OF INJURIES AND OR INJURY SEVERITY?								
B. IN WHAT FORM IS INJURY DATA RECORDED?								
C. WHAT ARE THE SOURCES OF THIS DATA?								
POLICE FIRE RESCUE SQUADS?								
AMBULANCE PERSONNEL?								
EMF PERSONNEL?								
PRIVATE DOCTOR?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________ CITY ____________ DATE ____________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
SECTION VI. RECORDS AND STATISTICS								
A. COLLECTION AND FORMATTING (CONTINUED)								
6. CONCERNING STATISTICS GATHERED ON FATALITIES ARISING OUT OF ROAD ACCIDENTS :						2		
A. ARE FATALITIES SEPARATED INTO FATALITIES AT MOMENT OF ACCIDENT AND FATALITIES THAT OCCUR LATER AS THE DIRECT RESULT OF THE ACCIDENT?								
B. IS TIME AND LOCATION OF DEATH (E.G., AT ACCIDENT SITE, IN AMBULANCE, AT EMF, ETC.) RECORDED?								
C. IS CAUSE OF DEATH RECORDED?								
D. WHAT ARE THE SOURCES OF THIS DATA :								
POLICE/FIRE/RESCUE SQUADS?								
AMBULANCE PERSONNEL?								
EMF PERSONNEL?								
PRIVATE DOCTOR?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	YF	SEC	SEE	SAM	SC	
SECTION VI. RECORDS AND STATISTICS								
A. COLLECTION AND FORMATTING (CONTINUED)								
7. CONCERNING STATISTICS ON CALLS FOR MEDICAL HELP IN CONNECTION WITH EVENTS OTHER THAN ROAD ACCIDENTS:						2		
A. IS TIME AND LOCATION OF EVENT RECORDED?								
B. IN WHAT FORM IS ILLNESS/INJURY DATA RECORDED?								
C. WHAT ARE THE SOURCES OF THIS DATA:								
POLICE/FIRE/RESCUE SQUADS?								
AMBULANCE PERSONNEL?								
EMF PERSONNEL?								
PRIVATE DOCTOR?								
8. FOR ALL CALLS FOR EMERGENCY HELP, ARE ANY OF THE FOLLOWING RECORDED?						2		
A. EVENT TIME?								
B. TIME OF CALL FOR HELP?								
C. TIME OF AMBULANCE DISPATCH?								
D. TIME OF AMBULANCE ARRIVAL AT SITE OF EVENT?								
E. TIME OF AMBULANCE ARRIVAL AT EMF?								
F. TIME OF DELIVERY OF PATIENT TO DEFINITIVE CARE?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

SECTION VI. RECORDS AND STATISTICS

A. COLLECTION AND FORMATTING (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	DC	
9. IS THERE A GENERAL REQUIREMENT TO SUBMIT DATA TO A SINGLE COLLECTION AGENCY (CENTRAL STATISTICAL DATA BASE)?						3		
A. CALLS FOR MEDICAL ASSISTANCE?								
B. INJURIES INFORMATION?								
C. FATALITY INFORMATION?								
10. SPECIFICALLY, ARE THE FOLLOWING EMS ACTIVITIES REQUIRED TO SUBMIT SUCH REPORTS TO STATE OR REGIONAL CENTRAL AGENCY?						3		
A. POLICE/FIRE/RESCUE TEAMS?								
B. AMBULANCE PERSONNEL?								
C. EMF PERSONNEL?								
11. WHAT IS FORMAT AND CONTENT OF THESE REPORTS?						3		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

SECTION VI. RECORDS AND STATISTICS	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
A. COLLECTION AND FORMATTING (CONTINUED)								
12. TO WHOM ARE THEY SUBMITTED AND HOW ARE THEY USED?						3		
13. WITH WHAT FREQUENCY ARE THEY SUBMITTED? (E.G., AS THEY OCCUR, WEEKLY, MONTHLY, ETC.)						1		
14. ARE EMS PERSONNEL ASSIGNED TO AMBULANCE UNITS REQUIRED TO SUBMIT REPORTS DESCRIBING THEIR RESPONSE TO EMERGENCY EVENTS IN GENERAL OR FOR TRAFFIC ACCIDENTS IN PARTICULAR? IF SO, WHAT INFORMATION IS REPORTED?						2		
15. IS HOSPITAL CATEGORY, AMBULANCE CATEGORY INCLUDED IN INJURY/FATALITY STATISTICS?						2		
16. WHAT INSTRUCTION OR TRAINING DO THE EMS PERSONNEL RECEIVE IN THE PREPARATION OF REPORTS?						2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______ CITY ______ DATE ______

SECTION VI. RECORDS AND STATISTICS	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
A. COLLECTION AND FORMATTING (CONTINUED)								
17. REGARDING RECORDS MAINTAINED BY EMFS:						3		
A. WHAT IS THE GENERAL SCOPE OF THESE RECORDS?								
B. TO WHAT EXTENT AND DETAIL DO THEY INCLUDE INFORMATION ON TREATMENT PROVIDED BY AMBULANCE UNIT PERSONNEL AND RESULTS OF THIS TREATMENT?								
C. WHAT IS DONE WITH THAT INFORMATION AND HOW IS IT USED?								
D. TO WHAT EXTENT AND DETAIL DO THEY INCLUDE INFORMATION ON TREATMENT PROVIDED BY EMFS AND RESULTS OF THIS TREATMENT?								
E. WHAT IS DONE WITH THAT INFORMATION AND HOW IS IT USED?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________________

SECTION VI. RECORDS AND STATISTICS

B. STORAGE, PROCESSING, AND ANALYSIS

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SC	
1. WHERE ARE THE FOLLOWING DATA STORED AND PROCESSED?						1		
A. ACCIDENT DATA?								
B. INJURY DATA?								
C. FATALITY DATA?								
2. ARE STATISTICS PROCESSED ANYWHERE WITHIN THE SYSTEM TO DETERMINE:						3		
A. TIME BETWEEN ACCIDENT AND REPORTING?								
B. TIME BETWEEN REPORTING AND AMBULANCE/RESCUE VEHICLE DISPATCH?								
C. TIME BETWEEN DISPATCH AND ARRIVAL OF AMBULANCE/RESCUE VEHICLE?								
3. TO WHOM ARE THE STATISTICS AVAILABLE?						2		
4. WHAT IS THE ACCESSIBILITY OF THESE STATISTICS:						2		
A. COMPUTER QUERY, LOCAL OR REMOTE?								
B. PERIODIC PRINTED REPORTS?								
C. OTHER?								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

SECTION VI. RECORDS AND STATISTICS	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	SEC	SEE	SAM	SC	
B. STORAGE, PROCESSING, AND ANALYSIS (CONTINUED)								
5. HOW ARE THE STATISTICS PROCESSED, ANALYZED, AND EVALUATED? (E.G., WHAT IS THE OUTPUT?)						2		
6. ARE ACCIDENT/ INJURY/FATALITY STATISTICS AS A FUNCTION OF TIME, ROAD CATEGORY AND ROAD CONDITION USED TO DEVELOP MODELS OF DIFFERENT ACCIDENT AREAS?						3		
7. HAS ANY WORK BEEN DONE IN MODELS OF AMBULANCE DEPLOYMENT INTERVENTION TIME EITHER IN CONJUNCTION WITH OR WITHOUT THE AID OF ACCIDENT AREA MODELS?						3		
8. DO YOU FEEL SUCH MODELS WOULD BE A USEFUL TOOL IN EMS EVALUATION?								X

EMERGENCY MEDICAL SERVICES SURVEY

STATE ____________ CITY ____________ DATE ____________

SECTION VI. RECORDS AND STATISTICS	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TP	SEC	SEE	SAM	SS	
C. FEEDBACK								
1. ARE ANY OF THE COLLECTED STATISTICS USED IN THE DETERMINATION OF WEAKNESSES IN THE EMS (I.E., TO FIND THE SOURCE AND REDUCE HIGH INTERVENTION TIMES, LOCATE AND ANALYZE PEAKS IN FATALITY RATE DISTRIBUTION, ETC.)						3		
2. HOW IS THE RESULTING INFORMATION APPLIED?						3		
3. ARE ANY ANALYSES MADE AND FED BACK TO THE REPORTING FACILITIES ON THE BASIS OF STATISTICS AND INFORMATION RE TREATMENT APPLIED AT:						3		
A. SITE OF EMERGENCY EVENT								
B. AMBULANCE								
C. EMF								

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
SECTION VI. RECORDS AND STATISTICS								
C. FEEDBACK (CONTINUED)								
4. FOR THE PURPOSE OF ASCERTAINING EFFECTIVENESS AND IMPROVEMENTS OF EFFECTIVENESS AS A RESULT OF CHANGES IN TECHNIQUE AND EQUIPMENT, IS THERE A SYSTEMATIC REVIEW OF:						3		
A. TREATMENT AT SITE OF EVENT								
B. TREATMENT IN AMBULANCE								
C. TREATMENT AT EMF								
5. WHAT IS THE NATURE OF SUCH REVIEWS AND WHAT ARE THE CRITERIA EMPLOYED?						2		
6. ARE SYSTEMATIC REVIEWS MADE OF EMF X-RAY SERVICES?						2		
7. WHAT IS DONE WITH THAT INFORMATION AND HOW IS IT USED?						3		
8. ARE SYSTEMATIC REVIEWS MADE OF DOAS AND DEATHS OCCURRING WITHIN FIXED TIMES OF ADMISSION?						2		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________ CITY ______________ DATE ______________

SECTION VI. RECORDS AND STATISTICS

C. FEEDBACK (CONTINUED)

	WEIGHT PER IMPACT CATEGORY							INFO ONLY
	SAV	SACC	TF	GEC	GEE	SAM	SC	
9. WHAT IS DONE WITH THAT INFORMATION AND HOW IS IT USED?						3		
10. ARE POST MORTEMS CONDUCTED? WHAT CRITERIA TO REQUIRE THEM?						2		
11. WHAT IS DONE WITH THAT INFORMATION AND HOW IS IT USED?						3		

EMERGENCY MEDICAL SERVICES SURVEY

STATE ______________________ CITY ______________________ DATE ______________

SECTION VI. RECORDS AND STATISTICS

D. COMMENTS AND NOTES

WEIGHT PER IMPACT CATEGORY							INFO ONLY
SAV	SACC	TF	GEC	GES	SAM	SC	

APPENDIX B

Evaluation Tally Sheet And Summary Form

This appendix consists of:

1. The criteria developed for the grading data collected in the course of the EMS Survey.
2. A set of Evaluation Tally Sheets, corresponding in structure to the EMS Survey Guide (Appendix A). These tally sheets are to be used to grade the data collected in the survey, and to compute the weighted scores by combining the grading and the weighting schemes on a question-by-question basis. Subtotals for the actual and net maximum possible scores for each subelement (group) are computed on these tally sheets.
3. An Evaluation Summary Sheet on which the actual and net maximum possible scores for each group are entered. The horizontal (by element and subelement) and vertical (by effectiveness parameter) summations are performed on this sheet. The effectiveness indices on a subelement, element, and effectiveness parameter basis are obtained by dividing the sum of the corresponding actual scores by the sum of the corresponding net maximum possible scores.

GRADING CRITERIA

Grade	
4	Outstanding efficiency Highly advanced state-of-the-art (i.e., trailblazing) technology, techniques, and procedures Evident superior benefits and performance Virtually flawless operation
3	Superior efficiency (as opposed to outstanding) Employing moderately advanced state-of-the-art technology, techniques, and procedures Possibly and/or partially superior benefits and performance Some deficiencies but not sufficient in number and severity to be of major detriment to system operation
2	Adequate efficiency – room for improvement Employing tried and proven (but not very advanced) technology, techniques, and procedures Adequate benefits and performance unevenly distributed throughout the system Number and severity of deficiencies such that system operation is somewhat hampered but not impeded in selected areas
1	Less than adequate efficiency – considerable room for improvement Employing somewhat antiquated/outdated technology, techniques, and procedures Less than adequate benefits and performance in several major elements of the system Number and severity of flaws such that system operation is impeded in several areas
0	Inadequate efficiency – major room for improvement Employing very antiquated/outdated technology, techniques, and procedures Evidently inadequate benefits and performance in most elements of the system Major deficiencies impede system operation in most areas
N/A	This grade is assigned to those questions which are either (a) not applicable to the specific EMS system being evaluated or (b) not answerable for reasons not affecting the quality or effectiveness of the system. The purpose of assigning an N/A grade is to avoid penalizing an EMS system by including the maximum possible score for N/A graded questions in the computation of the effectiveness indices. Such an inclusion would artificially lower the indices, since they consist of actual/maximum possible ratios.

0 is Lowest Grade
4 is Highest (Best) Grade

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II. ORGANIZATION ______________ STATE ______________

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			GEC			GEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1		3		12																		
	2		3		12																		
	3		1		4							3		12									
	4		1		4				1		4	1		4									
	5		2		8	3		12	2		8	3		12									
	6					2		8	3		12	1		4									
	7														3		12						
	8														3		12						
	9		2		8							3		12									
	10					3		12	3		12	1		4									
	11																	3		12			
	12					3		12	3		12												
	13					1		4															
	14A		3		12																		
	14B		3		12																		
	14C		3		12																		
	14D		3		12																		
	15A		1		4							3		12									
	15B		1		4				1		4	1		4									
	15C		2		8	3		12	2		8	3		12									
	15D					2		8	3		12	1		4									
	15E											2		8									
	15F											2		8									
	15G											2		8									
	15H					2		8	2		8	1		4									
	15I																	2		8			
CONT'D ON NEXT PAGE																							
VERT. SUBTOTALS																							
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II. ORGANIZATION ____________ STATE ____________

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	16		3		12																		
	17		3		12																		
	18		3		12																		
	19		2		8	2		8															
	20		2		8	2		8															
VERT. SUBTOTALS					164			92			80			108			24			20			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II. ORGANIZATION ______ STATE ______

			IMPACT CATEGORIES																				
			SAV			SACC			TF			QEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1A					1		4	1		4	1		4							2		8
	1B					2		8	2		8										2		8
	1C											2		8							2		8
	1D											2		8	2		8				2		8
	1E											2		8	2		8				2		8
VERT. SUBTOTALS								12			12			28			16						40
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II. ORGANIZATION ______________ STATE ______________

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			$AV			$ACC			TF			QEC			QEE			$AM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
C	1		2		8							1		4									
	2		2		8							1		4									
VERT. SUBTOTALS					16									8									
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION III. PERSONNEL ____________________ STATE ____________________

			IMPACT CATEGORIES																				
			SAV			SACC			TF			SKC			SEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1											2		8									
	2											3		12									
	3											2		8									
	4A											2		8									
	4B								1		4												
	4C																	1		4			
	4D								1		4	1		4									
	5A											2		8									
	5B											3		12									
	5C											3		12									
	5D								2		8												
	5E																	1		4			
	5F								1		4	1		4									
	6											2		8									
	7											2		8									
	8											2		8									
	9											2		8									
	10											3		12									
	11											2		8				2		8			
	12								1		4	1		4									
	13											2		8									
	14											2		8									
	15											2		8				1		4			
	16								1		4	1		4				2		8			
VERT. SUBTOTALS											28			160						28			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION III. PERSONNEL ______ STATE ______

			IMPACT CATEGORIES																				
		GRADE (0–4)	SAV			SACC			TF			[illegible]			[illegible]			[illegible]			[illegible]		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1A											2		8									
	1B											2		8									
	1C					2		8	2		8	1		4									
	1D																	1		4			
	2A					2		8				3		12									
	2B					1		4				2		8									
	2C					2		8	1		4	1		4									
	2D								2		8	1		4									
	2E																	2		8			
	3					3		12				2		8									
VERT. SUBTOTALS								40			20			56						12			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT STATE ______

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
				SAV SCORE			SACC SCORE			TT SCORE			[illegible] SCORE			[illegible] SCORE			[illegible] SCORE			[illegible] SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1														2		8						
	2														3		12						
	3														3		12						
	4														2		8						
	5														2		8						
	6								1		4												
	7A											1		4				2		8			
	7B											1		4				2		8			
VERT. SUBTOTALS											4			8			48			16			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT STATE ______

			IMPACT CATEGORIES																				
				[illegible]			[illegible]			[illegible]			[illegible]			[illegible]			[illegible]			[illegible]	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1														2		8						
	2											2		8	2		8						
	3																				1		4
	4A																				1		4
	4B																				2		8
VERT. SUBTOTALS														8			16						16
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT ____________ STATE ____________

			IMPACT CATEGORIES																				
			RAV			RACC			TF			[illegible]			[illegible]			[illegible]			[illegible]		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
C	1					1		4	2		8												
	2								2		8												
	3								1		4										2		8
	4																				1		4
	5A																				1		4
	5B																				2		8
	6								1		4												
	7																				2		8
VERT. SUBTOTALS								4			24												32
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT STATE ____________

			IMPACT CATEGORIES																				
			SAV			SACC			TF			QEC			QEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
D	1																	1		4			
	2																	2		8			
VERT. SUBTOTALS																				12			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE ____________

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			QEC			QEE			SAM			SC		
			WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE	
				ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX
A	1					1		4	3		12												
	2					1		4	2		8												
	3					1		4	3		12												
	4								1		4							2		8			
	6								2		8							1		4			
VERT. SUBTOTALS								12			44									12			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE ____________

			IMPACT CATEGORIES																		
			SAV			SACC			TF			OEC			OES			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1					3		12	3		12												
	2					2		8	2		8												
	3					2		8	2		8												
	4					2		8	2		8												
	5					2		8	2		8												
	6					1		4	1		4												
	7					1		4	1		4												
	8								2		8	1		4									
	9								2		8	1		4									
	10								2		8	1		4									
	11								2		8							2		8			
VERT. SUBTOTALS								52			84			12						8			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES ____ STATE ____

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES SAV			SACC			TP			QOC			CEE			SAM			[illegible]		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
C	1								2		8												
	2								2		8												
	3								2		8												
	4								2		8												
	5								2		8												
	6					2		8	2		8												
	7					2		8	2		8												
	8A					1		4	1		4							2		8			
	8B											1		4				2		8			
	9								2		8												
	10								1		4							2		8			
	11					2		8	2		8												
	12					2		8	2		8												
	13					2		8	2		8												
	14											3		12									
	15								3		12	3		12									
	16																	3		12			
	17								1		4	1		4									
	18											2		8									
	20											2		8				1		4			
	22A								2		8							2		8			
	22B					2		8	2		8							2		8			
	22C											2		8				2		8			
	23								1		4												
	24								1		4												
VERT. SUBTOTALS								52			136			56						64			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES ________ STATE ________________

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
			WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE		WT	SCORE	
				ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX		ACTL	MAX
D	1											3		12									
	2								1		4	2		8									
	3											3		12									
	4											3		12									
	5											1		4				1		4			
	6		1		4							2		8									
VERT. SUBTOTALS					4						4			56						4			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE ______

			IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
E	1											3		12									
	2											3		12									
	3											3		12									
	4											1		4				1		4			
VERT. SUBTOTALS														40						4			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE ____________

			IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
	QSTN	GRADE (0–4)		SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	NO.	OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
F	1								2		8												
	2								2		8												
	3								2		8												
	4								2		8												
	5								2		8												
	6																	2		8			
	7																	2		8			
	8																	2		8			
	9											2		8				1		4			
VERT. SUBTOTALS											40			8						28			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION VI. RECORDS AND STATISTICS ____________ STATE ____________

			IMPACT CATEGORIES																				
			SAV			SACC			TF			[illegible]			[illegible]			[illegible]			[illegible]		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1																	2		8			
	2																	2		8			
	3																	2		8			
	4																	2		8			
	5																	2		8			
	6																	2		8			
	7																	2		8			
	8																	2		8			
	9																	3		12			
	10																	3		12			
	11																	3		12			
	12																	3		12			
	13																	1		4			
	14																	2		8			
	15																	2		8			
	16																	2		8			
	17																	3		12			
VERT. SUBTOTALS																				[illegible]			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION VI. RECORDS AND STATISTICS STATE ______

			IMPACT CATEGORIES																				
			SAV			SACC			TF			DEC			OEE			SAM			SC		
		GRADE (0–4)		SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1																	1		4			
	2																	3		12			
	3																	2		8			
	4																	2		8			
	5																	2		8			
	6																	3		12			
	7																	3		12			
VERT. SUBTOTALS																				64			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION VI. RECORDS AND STATISTICS STATE ____________ ________

GRP	QSTN NO.	GRADE (0-4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
C	1																	3		12			
	2																	3		12			
	3																	3		12			
	4																	3		12			
	5																	2		8			
	6																	2		8			
	7																	3		12			
	8																	2		8			
	9																	3		12			
	10																	2		8			
	11																	3		12			
VERT. SUBTOTALS																				116			
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION SUMMARY SHEET

STATE ____________________

ELEMENT AND SUBELEMENT SECT.	GRP.	IMPACT CATEGORIES SAV ACTL	SAV NET MAX	SACC ACTL	SACC NET MAX	TF ACTL	TF NET MAX	QEC ACTL	QEC NET MAX	QEE ACTL	QEE NET MAX	SAM ACTL	SAM NET MAX	SC ACTL	SC NET MAX	HORIZONTAL TOTALS (BY ELEMENT/SUBELEMENT)	ACTL	NET MAX	RATIO
II	A		___		___		___		___		___		___			II A			
	B				___		___		___		___				___	II B			
	C		___						___							II C			
																II TOTAL			
III	A						___		___				___			III A			
	B				___		___		___				___			III B			
																III TOTAL			
IV	A						___		___		___		___			IV A			
	B								___		___				___	IV B			
	C				___		___								___	IV C			
	D												___			IV D			
																IV TOTAL			
V	A				___		___						___			V A			
	B				___		___		___				___			V B			
	C				___		___		___				___			V C			
	D		___				___		___				___			V D			
	E								___				___			V E			
	F						___		___				___			V F			
																V TOTAL			
VI	A												___			VI A			
	B												___			VI B			
	C												___			VI C			
																VI TOTAL			
VERT. TOTALS (BY IMPACT CATEGORY)																GRAND TOTAL			
RATIOS																GRAND TOTAL RATIO			

PROCEDURES FOR COMPLETING MATHEMATICAL EVALUATION

1. Write the grade given to each answered question in the appropriate row of the evaluation tally sheets in the column provided for the grades.
2. For each question multiply the grade given by the weight shown in each applicable impact category column. (Applicability is indicated by the weight number in the impact category column.) Write the product of grade and weight in the "actual score"(ACTL) column. The figures printed in the maximum (MAX) score column represent the maximum possible score that could be obtained if the highest possible grade (4) were multiplied by the weight.
3. After all the tally sheets have been completed in this manner, add all actual scores in each impact column for each group and write the sum in the vertical subtotals row under each impact column. Note that there is a separate tally sheet for each group of each section. Only Group A of Section II requires two tally sheets.
4. In each impact column, add the maximum score for those questions graded N/A, and write this sum under the printed figure for maximum score in the "less N/A MAX" row.
5. Subtract the two to obtain the "NET VERTICAL SUBTOTALS."

   NOTE: Subtract the N/A sum only from the MAX column, not from the ACTL column.
6. Every tally sheet representing one single group of one section should now have in the bottom row (NET VERT. SUBTOTALS) a set of figures representing a sum of the actual scores in each impact column and, to the right of that, a sum of the net maximum possible scores in each impact column.
7. Transfer all the net vertical subtotals (actual and net maximum vertical sums) for each group of each section to the evaluation summary sheet.

Use of the tally sheet is now complete. The following instructions refer to the Evaluation Summary Sheets.

8. Sum all the actual and all the net maximum scores in each impact category (vertical sum) and write the sums in the vertical totals row.
9. Compute the ratio of actual to net maximum in each impact category. (This figure must be ≤ 1.0.) These ratios represent the effectiveness of each impact category of the system being surveyed.
10. Add all the actual scores horizontally for each group and write the sum into the actual column in the right hand side of the summary sheet (horizontal totals by element/subelement).
11. Repeat for the net maximum score.
12. Compute the ratio of actual to net max for each group and write the figure into the ratio column. These ratios represent the effectiveness index for each subelement of the system.
13. Vertically add the actual scores and the net maximum scores for each group to obtain the totals for each section.
14. Compute the ACTL/NET MAX ratio for each section and write the figure in the appropriate ratio column. Note that the section ratio is based on the sum of the actual scores and the sum of the net maximum scores and *is not the sum of the group ratios or an average thereof.*
15. Repeat this procedure for all groups and all five sections shown on the summary sheet.
16. If desired, an effectiveness ratio can be obtained for the entire system by summing all the section actual scores and all the section net maximum scores and computing the ratio of the two. The same grand total ratio can of course be obtained by summing all the actual scores written in the vertical totals under each impact category, doing the same for the net maximum scores, and computing the ratio of the two. It is advisable to check the mathematics by doing the sums on both the horizontal and vertical basis, as these sums must be the same.

APPENDIX C

Procedures for Completing Mathematical Evaluation

This appendix consists of a set of completed Evaluation Tally Sheets and the corresponding Evaluation Summary Sheet.

The example given in this appendix is illustrative only. It is based on a composite of answers obtained during the final field testing of the methodology rather than of those obtained in the course of the survey of a single state.

It was felt, for reasons given in detail in Section B of this report, that the field tests did not consist of a valid survey of each of the states tested (nor were they intended to) and an illustrative evaluation example based on the results of one single state survey would consequently present a distorted, and possibly unfair, picture of that state's EMS System.

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II ORGANIZATION STATE CAMPOSiTE

			IMPACT CATEGORIES																				
			SAV			SACC			TF			GEC			CEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1	3	3	9	12																		
	2	3	3	9	12																		
	3	2	1	2	4							3	6	12									
	4	1	1	1	4				1	1	4	1	1	4									
	5	1	2	2	8	3	3	12	2	2	8	3	3	12									
	6	2				2	4	8	3	6	12	1	2	4									
	7	2													3	6	12						
	8	2													3	6	12						
	9	1	2	2	8							3	3	12									
	10	N/A				3	–	12	3	–	12	1	–	4									
	11	3																3	9	12			
	12	0				3	0	12	3	0	12												
	13	N/A				1	–	4															
	14A	2	3	6	12																		
	14B	2	3	6	12																		
	14C	0	3	0	12																		
	14D	3	3	9	12																		
	15A	3	1	3	4							3	9	12									
	15B	1	1	1	4				1	1	4	1	1	4									
	15C	2	2	4	8	3	6	12	2	4	8	3	6	12									
	15D	2				2	4	8	3	6	12	1	2	4									
	15E	3										2	6	8									
	15F	2										2	4	8									
	15G	2										2	4	8									
	15H	1				2	2	8	2	2	8	1	1	4									
	15I	3																2	6	8			
CONT'D ON NEXT PAGE																							
VERT. SUBTOTALS																							
LESS N/A MAX																							
NET VERT. SUBTOTALS																							

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II. ORGANIZATION STATE COMPOSITE

			IMPACT CATEGORIES																				
			SAV			SACC			TF			DEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	16	N/A	3	—	12																		
	17	N/A	3	—	12																		
	18	2	3	6	12																		
	19	2	2	4	8	2	4	8															
	20	3	2	6	8	2	6	8															
VERT. SUBTOTALS				70	164		29	92		22	80		48	108		12	24		15	20			
LESS N/A MAX					24			16			12			4			—			—			
NET VERT. SUBTOTALS				70	140		29	76		22	68		48	104		12	24		15	20			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II. ORGANIZATION STATE Composite

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			QEC			QEE			SAM			AC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1A	2				1	2	4	1	2	4	1	2	4							2	4	8
	1B	1				2	2	8	2	2	8										2	2	8
	1C	2										2	4	8							2	4	8
	1D	2										2	4	8	2	4	8				2	4	8
	1E	2										2	4	8	2	4	8				2	4	8
VERT. SUBTOTALS							4	12		4	12		14	28		8	16					18	40
LESS N/A MAX								–			–			–			–						–
NET VERT. SUBTOTALS							4	12		4	12		14	28		8	16					18	40

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION II. ORGANIZATION STATE COMPOSITE

			IMPACT CATEGORIES																		
			SAV			SACC			TF			OEC			OEE			SAM			SC		
		GRADE (0–4)		SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
C	1	2	2	4	8							1	2	4									
	2	2	2	4	8							1	2	4									
VERT. SUBTOTALS				8	16								4	8									
LESS N/A MAX					–									–									
NET VERT. SUBTOTALS				8	16								4	8									

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION III. PERSONNEL STATE Composite

			IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			EAM			EC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1	1										2	2	8									
	2	2										3	6	12									
	3	2										2	4	8									
	4A	1										2	2	8									
	4B	1							1	1	4												
	4C	0																1	0	4			
	4D	2							1	2	4	1	2	4									
	5A	1										2	2	8									
	5B	2										3	6	12									
	5C	1										3	3	12									
	5D	1							2	2	8												
	5E	0																1	0	4			
	5F	2							1	2	4	1	2	4									
	6	3										2	6	8									
	7	2										2	4	8									
	8	2										2	4	8									
	9	3										2	6	8									
	10	2										3	6	12									
	11	2										2	4	8				2	4	8			
	12	1							1	1	4	1	1	4									
	13	2										2	4	8									
	14	2										2	4	8									
	15	N/A										2	–	8				1	–	4			
	16	2							1	2	4	1	2	4				2	4	8			
VERT. SUBTOTALS										10	28		70	160					8	28			
LESS N/A MAX											–			8						4			
NET VERT. SUBTOTALS										10	28		70	152					8	24			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION III. PERSONNEL STATE COMPOSITE

			IMPACT CATEGORIES																				
			SAV			SACC			TP			OEC			DEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1A	2										2	4	8									
	1B	1										2	2	8									
	1C	1				2	2	8	2	2	8	1	1	4									
	1D	1																1	1	4			
	2A	2				2	4	8				3	6	12									
	2B	3				1	3	4				2	6	8									
	2C	3				2	6	8	1	3	4	1	3	4									
	2D	1							2	2	8	1	1	4									
	2E	3																2	6	8			
	3	2				3	6	12				2	4	8									
VERT. SUBTOTALS							21	40		7	20		27	56					7	12			
LESS N/A MAX								–			–			–						–			
NET VERT. SUBTOTALS							21	40		7	20		27	56					7	12			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT STATE COMPOSITE

			IMPACT CATEGORIES																				
			SAV			SACC			TF			QEC			QEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1	2													2	4	8						
	2	1													3	3	12						
	3	2													3	6	12						
	4	2													2	4	8						
	5	2													2	4	8						
	6	2							1	2	4												
	7A	N/A										1	–	4				2	–	8			
	7B	3										1	3	4				2	6	8			
VERT. SUBTOTALS										2	4		3	8		21	48		6	16			
LESS N/A MAX											–			4			–			8			
NET VERT. SUBTOTALS										2	4		3	4		21	48		6	8			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT STATE Composite

			IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEF			SAM			SC		
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX
B	1	2													2	4	8						
	2	2										2	4	8	2	4	8						
	3	2																			1	2	4
	4A	2																			1	2	4
	4B	2																			2	4	8
VERT. SUBTOTALS													4	8		8	16					8	16
LESS N/A MAX														–			–						–
NET VERT. SUBTOTALS													4	8		8	16					8	16

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT STATE COMPOSITE

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
			WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX
C	1	N/A				1		4	2		8												
	2	N/A							2		8												
	3	N/A							1		4										2		8
	4	N/A																			1		4
	5A	N/A																			1		4
	5B	N/A																			2		8
	6	N/A							1		4												
	7	N/A																			2		8
VERT. SUBTOTALS							–	4		–	24											–	32
LESS N/A MAX								4			24												32
NET VERT. SUBTOTALS							–	0		–	0											–	0

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION IV. EQUIPMENT STATE *COMPOSITE*

			IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
D	1	2																1	2	4			
	2	1																2	2	8			
VERT. SUBTOTALS																			4	12			
LESS N/A MAX																				–			
NET VERT. SUBTOTALS																			4	12			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE *Composite*

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEX			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
A	1	0				1	0	4	3	0	12												
	2	0				1	0	4	2	0	8												
	3	1				1	1	4	3	3	12												
	4	0							1	0	4							2	0	8			
	6	N/A							2	–	8							1	–	4			
VERT. SUBTOTALS							1	12		3	44								0	12			
LESS N/A MAX								–			8									4			
NET VERT. SUBTOTALS							1	12		3	36								0	8			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE *COMPOSITE*

IMPACT CATEGORIES

GRP	QSTN NO.	GRADE (0–4) OR N/A	SAV WT	SAV SCORE ACTL	SAV SCORE MAX	SACC WT	SACC SCORE ACTL	SACC SCORE MAX	TF WT	TF SCORE ACTL	TF SCORE MAX	QEC WT	QEC SCORE ACTL	QEC SCORE MAX	QEE WT	QEE SCORE ACTL	QEE SCORE MAX	SAM WT	SAM SCORE ACTL	SAM SCORE MAX	SC WT	SC SCORE ACTL	SC SCORE MAX
B	1	3				3	9	12	3	9	12												
	2	3				2	6	8	2	6	8												
	3	2				2	4	8	2	4	8												
	4	1				2	2	8	2	2	8												
	5	0				2	0	8	2	0	8												
	6	0				1	0	4	1	0	4												
	7	0				1	0	4	1	0	4												
	8	1							2	2	8	1	1	4									
	9	N/A							2	–	8	1	–	4									
	10	N/A							2	–	8	1	–	4									
	11	N/A							2	–	8							2	–	8			
VERT. SUBTOTALS							21	[illegible]		23	84		1	12					–	8			
LESS N/A MAX								–			24			8						8			
NET VERT. SUBTOTALS							21	52		23	60		1	4					–	0			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE Composite

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			[illegible]			[illegible]			[illegible]			[illegible]		
			WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX
C	1	2							2	4	8												
	2	2							2	4	8												
	3	2							2	4	8												
	4	2							2	4	8												
	5	2							2	4	8												
	6	3				2	6	8	2	6	8												
	7	3				2	6	8	2	6	8												
	8A	3				1	3	4	1	3	4							2	6	8			
	8B	3										1	3	4				2	6	8			
	9	2							2	4	8												
	10	N/A							1	–	4							2	–	8			
	11	3				2	6	8	2	6	8												
	12	3				2	6	8	2	6	8												
	13	1				2	2	8	2	2	8												
	14	1										3	3	12									
	15	1							3	3	12	3	3	12									
	16	N/A																3	–	12			
	17	N/A							1	–	4	1	–	4									
	18	2										2	4	8									
	20	2										2	4	8				1	2	4			
	22A	N/A							2	–	8							2	–	8			
	22B	N/A				2	–	8	2	–	8							2	–	8			
	22C	N/A										2	–	8				2	–	8			
	23	1							1	1	4												
	24	2							1	2	4												
VERT. SUBTOTALS							29	52		59	136		17	56					14	64			
LESS N/A MAX								–			24			12						44			
NET VERT. SUBTOTALS							29	52		59	112		17	44					14	20			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE COMPOSITE

			IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX
D	1	N/A										3	–	12									
	2	1							1	1	4	2	2	8									
	3	N/A										3	–	12									
	4	0										3	0	12									
	5	2										1	2	4				1	2	4			
	6	2	1	2	4							2	4	8									
VERT. SUBTOTALS				2	4					1	4		8	[illegible]					2	4			
LESS N/A MAX					–						–			24						–			
NET VERT. SUBTOTALS				2	4					1	4		8	32					2	4			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE COMPOSITE.

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
E	1	3										3	9	12									
	2	3										3	9	12									
	3	0										3	0	12									
	4	N/A										1	–	4				1	–	4			
VERT. SUBTOTALS													18	40					–	4			
LESS N/A MAX														4						4			
NET VERT. SUBTOTALS													18	36					–	0			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION V. OPERATIONAL PROCEDURES STATE Composite

			IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			GEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
F	1	1							2	2	8												
	2	2							2	4	8												
	3	2							2	4	8												
	4	N/A							2	–	8												
	5	2							2	4	8												
	6	2																2	4	8			
	7	2																2	4	8			
	8	2																2	4	8			
	9	0										2	0	8				1	0	4			
VERT. SUBTOTALS										14	40		0	8					12	28			
LESS N/A MAX											8			–						–			
NET VERT. SUBTOTALS										14	32		0	8					12	28			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION VI. RECORDS AND STATISTICS STATE Composite

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			CEC			CEE			SAM			SC		
			WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX	WT	SCORE ACTL	SCORE MAX
A	1	3																2	6	8			
	2	2																2	4	8			
	3	1																2	2	8			
	4	2																2	4	8			
	5	2																2	4	8			
	6	3																2	6	8			
	7	3																2	6	8			
	8	3																2	6	8			
	9	3																3	9	12			
	10	2																3	6	12			
	11	2																3	6	12			
	12	3																3	9	12			
	13	3																1	3	4			
	14	3																2	6	8			
	15	2																2	4	8			
	16	2																2	4	8			
	17	2																3	6	12			
VERT. SUBTOTALS																			91	152			
LESS N/A MAX																				-			
NET VERT. SUBTOTALS																			91	152			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION VI. RECORDS AND STATISTICS STATE COMPOSITE

GRP	QSTN NO.	GRADE (0–4) OR N/A	IMPACT CATEGORIES																				
			SAV			SACC			TF			OEC			OEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
			WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
B	1	2																1	2	4			
	2	1																3	3	12			
	3	2																2	4	8			
	4	2																2	4	8			
	5	3																2	6	8			
	6	1																3	3	12			
	7	N/A																3	–	12			
VERT. SUBTOTALS																			22	64			
LESS N/A MAX																				12			
NET VERT. SUBTOTALS																			22	52			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION TALLY SHEET

SURVEY GUIDE SECTION VI. RECORDS AND STATISTICS STATE *COMPOSITE*

			IMPACT CATEGORIES																				
			SAV			SACC			TF			GEC			GEE			SAM			SC		
				SCORE			SCORE			SCORE			SCORE			SCORE			SCORE			SCORE	
GRP	QSTN NO.	GRADE (0–4) OR N/A	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX	WT	ACTL	MAX
C	1	3																3	9	12			
	2	3																3	9	12			
	3	3																3	9	12			
	4	3																3	9	12			
	5	3																2	6	8			
	6	0																2	0	8			
	7	N/A																3	–	12			
	8	2																2	4	8			
	9	1																3	3	12			
	10	2																2	4	8			
	11	1																3	3	12			
VERT. SUBTOTALS																			56	116			
LESS N/A MAX																				12			
NET VERT. SUBTOTALS																			56	104			

EMERGENCY MEDICAL SERVICES SYSTEM SURVEY – EVALUATION SUMMARY SHEET

STATE *COMPOSITE.*

ELEMENT AND SUBELEMENT SECT.	GRP.	IMPACT CATEGORIES SAV ACTL	NET MAX	SACC ACTL	NET MAX	TP ACTL	NET MAX	OEC ACTL	NET MAX	OEE ACTL	NET MAX	SAM ACTL	NET MAX	SC ACTL	NET MAX
II	A	70	140	29	76	22	68	48	104	12	24	15	20		
	B			4	12	4	12	14	28	8	16			18	40
	C	8	16					4	8						
III	A					10	28	70	152			8	24		
	B			21	40	7	20	27	56			7	12		
IV	A					2	4	3	4	21	48	6	8		
	B							4	8	8	16			8	16
	C				—	–	0							–	0
	D											4	12		
V	A			1	12	3	36					0	8		
	B			21	52	23	60	1	4			–	0		
	C			29	52	59	112	17	44			14	20		
	D	2	4			1	4	8	32			2	4		
	E							18	40			–	0		
	F					14	32	0	8			12	28		
VI	A											91	152		
	B											22	52		
	C											56	104		
VERT. TOTALS (BY IMPACT CATEGORY)		80	160	105	244	145	376	214	488	49	104	237	444	26	56
RATIOS			.50		.43		.39		.44		.47		.53		.46

HORIZONTAL TOTALS (BY ELEMENT/SUBELEMENT)	ACTL	NET MAX	RATIO
II A	196	432	.45
II B	48	108	.44
II C	12	24	.50
II TOTAL	256	564	.45
III A	88	204	.43
III B	62	128	.48
III TOTAL	150	332	.45
IV A	32	64	.50
IV B	20	40	.50
IV C	–	0	–
IV D	4	12	.33
IV TOTAL	56	116	.48
V A	4	56	.07
V B	45	116	.39
V C	119	228	.52
V D	13	44	.30
V E	18	40	.45
V F	26	68	.38
V TOTAL	225	552	.41
VI A	91	152	.60
VI B	22	52	.42
VI C	56	104	.54
VI TOTAL	169	308	.55
GRAND TOTAL	856	1872	
GRAND TOTAL RATIO			.46